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REPORT ON UNDERSTANDING NEW MEDIA.

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DESCRIPTORS- *MASS MEDIA, *MEDIA TECHNOLOGY, *SENSORY EXPERIENCE, *SOCIAL CHANGE, *LANGUAGE PATTERNS, CULTURAL FACTORS, LEARNING, EXPERIMENTS,

IN TYPICAL MCLUHAN STYLE, THE AUTHOR OF THIS WORKING PAPER TRACES HISTORICAL-CULTURAL TRANSITIONS FROM PHONETIC ALPHABET TECHNOLOGY TO MEDIA OF THE NEW ELECTRONIC TECHNOLOGY. THESE MEDIA ARE VIEWED AS EXTENSIONS OF MAN'S SENSES, AND AS LANGUAGES THEMSELVES, WHOSE ONLY CONTENT ARE OTHER MEDIA. EACH MEDIUM (E.G. SPEECH, WRITING, PRINT, PHOTOGRAPHY, THE PRESS, RADIO, TELEVISION, FILM, PHONOGRAPH) IS DISCUSSED IN TEXT, AND IN THOUGHT-PROVOKING QUESTIONS, IN ANNOTATED BIBLIOGRAPHIES, AND IS REPRESENTED ON A CHART IN TERMS OF "HIGH" OR "LOW DEFINITION", MCLUHAN'S TERMS FOR HUMAN SENSORY RESPONSE TO MEDIA. ALSO REPORTED IN THIS PAPER IS AN EXPERIMENT DESIGNED TO COMPARE EFFECTS OF RADIO, TELEVISION, SPEECH, AND PRINT ON LEARNING. THE SAME FACTUAL MATERIAL (DUPLICATED IN THIS DOCUMENT) WAS PRESENTED IN EACH MEDIUM TO ABOUT 100 COLLEGE UNDERGRADUATES, WHO WERE FULLY INFORMED OF THE EXPERIMENT AND ITS OBJECTIVES PRIOR TO THEIR PARTICIPATION IN IT. ANALYSIS OF VARIANCE OF THE EXPERIMENTAL GROUPS, WHICH WERE HOMOGENEOUS FOR INTELLIGENCE, SHOWED SIGNIFICANT DIFFERENCES IN LEARNING, BOTH IMMEDIATE, AND AFTER EIGHT MONTHS, WITH TELEVISION MOST EFFECTIVE, THEN RADIO, THEN PRINT. CAUTION IN INTERPRETING AND GENERALIZING THESE RESULTS IS URGED. (LH)

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PROJECT IN
UNDERSTANDING NEW MEDIA
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REPORT ON
UNDERSTANDING NEW MEDIA

June 30th, 1960

From

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The _Introduction to the Syllabus_ and _Media Log I and II_ were mailed out to various people, early in the project, to elicit criticism and suggestion.

PREFACE

My discussion here concerns the resolving of the two kinds of research in terms of the phonetic and numerical, i.e. between Euclidean and non-Euclidean space.

Von Bekesy is exceptional among scientific researchers in understanding the diversity of these methods. (see photocopies ff.)

My own work has had to follow the mosaic pattern, while keeping in mind the scope and relevance of the perspective pattern.

In his book on Number The Language of Science, Tobias Dantzig faces the same conflict of method and approach in quite different terms. (pp.130ff) Dantzig refers to the task of modern mathematics as having been the translation of natural, rational, Euclidean space into our other senses. Euclidean space is the product in our Western experience of the phonetic alphabet. As a mathematician, Dantzig does not know this but that in no way invalidates his report that Number The Language of Science is a technique for translating a visual experience into the non-visual.

The alphabet, on the other hand, is by definition a technique for translating sound and the other senses into visual terms. In his book The Sacred and the Profane, Mircea Eliade reports in detail how neither time nor space have continuity or homogeneity for pre-literate societies. Only after the translation of preliterate experience into visual phonetic alphabetic terms does there occur in human experience the concept or awareness of uniformity, continuity, and homogeneity in time and space.

The discovery that such characteristic of experience are fictions which proceed from phonetic alphabet technology is one

of the dominant concerns of the present report. Since the Western world has been created by alphabetic technology, with its various extensions through print and paper, it becomes necessary to-day to understand the alphabetic medium as well as the print medium if we are to exercise any responsibility toward our existing educational, political, and legal establishments in the Western world.

For the electronic technology has nothing in common with the alphabetic and is not merely a way of restoring pre-literate awareness to the twentieth century man. The electronic technology as much brainwashes literate man.

This raises another dominant concern of the present report on understanding media. Western man is an easy victim of the new technology, when he slips into the habit of appraising media situations in terms of their "content". Let it be said at once that content is a natural illusion and fallacy of the alphabetic technology. Since the alphabet is a visual code for speech, there is always the illusion in the written form that speech is "contained" in the visual code. Speech is not contained in the visual code, but is parallel. And the relation between the two media of speech and visual code are utterly different under manuscript and under print conditions.

The illusion that visual code "contains" anything extends to many areas of Western visual experience, pictorial, or Euclidean or visual space. The painters and mathematicians were the first to penetrate this illusion. Since Cezanne, perspective or fixed point of view and vanishing point are no longer taken for granted

in visual organization. In *Art and Illusion*, E. H. Gombrich

says: "When Bernard Berenson wrote his brilliant essay on the Florentine painters, which came out in 1896, he formulated his aesthetic creed in terms of Hildebrand's analysis. With his gift for the pregnant phrase, he summed up almost the whole of the sculptor's somewhat turgid book in the sentence, 'The painter can accomplish his task only by giving tactile values to retinal impressions'".

The mathematician by comparison with the painter had long before substituted structure for content. Sir Arthur Eddington, in his *New Pathways in Science* (Cambridge University Press 1935) makes a statement of relevance to those who are trying to understand why "the medium is the message":

"Out of the unknown activities of unknown agents mathematical numbers emerge. The processes of the external world cannot be described in terms of familiar images; whether we describe them by words or by symbols their intrinsic nature remains unknown. But they are the vehicle of a scheme of relationship which can be described by numbers, and so give rise to those numerical measures (pointer-readings) which are the data from which all knowledge of the external universe is inferred.

"Our account of the external world (when purged of the inventions of the story teller in consciousness) must necessarily be a "jabberwocky" of unknowable actors executing unknowable actions. How in these conditions can we arrive at any knowledge at all? We must seek a knowledge which is neither of actors nor of actions, but of which the actors and actions are a vehicle. The knowledge we can acquire is knowledge of a structure or pattern contained in the actions. I think that the artist may partly understand what I mean". (p.256)

The reason why the mathematician has no illusion of "content" is quite simply that his own discipline has for so long been an instrument for translating one "content" into another that he cannot share the outlook of a man for whom "content" and point of view are unquestioned postulates of experience. But to-day even information theory and game theory theoraticians have fallen into the "content" fallacy with consequent frustration of their

endeavours. The information theory people who deal with communication channels as "encoding" or "containing" devices have quite naturally come up against a wall of contradictions. For the encoding technology, be ti telephone or radio, is as much as the phonetic alphabet a medium with its own language and bias for perception. The game theory experts, after a promising start, bogged down in their failure to understand that game is a medium or a language by itself which needs to be understood on its own terms.

The Scientific American for June, 1960, features LOGLAN: "This logical language is now being synthesized on modern linguistic principles, largely to examine the hypothesis that the world view of the members of a culture is determined by the structure of their language".

A glance at Von Bekesy reveals how sternly our pictorial perspective approach in the sciences repels the pluralistic mosaic approach and yet in our electronic technology we have to live by the mosaic pluralistic and nuclear pattern--even while our thoughts and methods move on the rigid rails of perspective convergence and vanishing point. That LOGLAN should have reached a phase of scientific popularization is an indication of where we stand.

The present report deals with the major media as languages in the full structural sense. That is, any medium based on any of our senses has the power of imposing its own assumptions.

Two generations ago a respected art critic showed that the function of painting was to translate the visual into the tactual. This critic, Bernard Berenson, was working with his

eyes on the theories of the sculptor Hildebrand. Berenson had begun to say exactly the same things as the mathematicians, like Dantzig, were saying.

What Dantzig is saying in a book like Number is that in the Western world there have been two parallel and contradictory languages for thousands of years. The language of number and science, on one hand; the language of the alphabet and culture, on the other. The language of the alphabet was the technology by which man translated himself out of auditory tribal space into the linear rational Euclidean world "where nothing takes place but what is straight, flat and uniform. Columbus and his contemporaries, by accepting the uniform lineal space of the new age of print, pushed on into the discovery of a round earth. Exactly the same situation has resulted in the discovery of nuclear phenomena in the subatomic dimension (Joyce formulated this paradoxical situation as "Gutenmorg" with his cromagnon charter" (p.20 line 5 of Finnegans Wake)).

It is only in our present century that we have had sufficient speed and simultaneity of access to large bodies of collective cultural data to enable us to understand the dynamics of change and cultural translation. Dantzig, for example states (p.141) "The attempt to apply rational arithmetic to a problem in geometry resulted in the first crisis in the history of mathematics".

In a word, the attempt at the translation of one mode into another created the crisis. The birth of linear and rational space "where nothing takes place but what is straight, flat and uniform" was one of the consequences of applying the phonetic

applied to the translation of pre-literate experience. The pressing challenge and need to translate linear rational space back into its pre-literate modes was met by the infinitesimal calculus which acted as a bridge between the Euclidean and non-Euclidean during recent centuries.

The principal of translation so characteristic of all media problems is mentioned by Dantzig (Number p.89) in tracing the analogy between the history of algebra and that of arithmetic: "The symbol has a meaning which transcends the object symbolized; and that is why it is not a mere formality.

"In the second place the letter (in algebra) is susceptible of operations which enables one to transform literal expressions and thus to paraphrase any statement into a number of equivalent forms. It is this power of transformation that lifts algebra above the level of a convenient shorthand".

The mathematical recognition of the transforming and translating character of various media of notation enabled mathematics to move faster and more securely through its problems. But the greatest tool which the mathematician had to work with in recent centuries, for the purpose of translating one space into another, is the process of infinity or of repetition toward a convergence on zero which is an accidental derivative of the printing press. The basic character of print as uniform and repeatable to infinity had consequences in mathematics as well as in literature. As Dantzig states (Number p.77) "And yet the concept of infinity, though not imposed upon us either by logic or by experience, is a mathematical necessity. What is, then, behind this power of the

mind to conceive the indefinite repetition of an act when this act is once possible? To this question I shall return again and again throughout this study".

Again, on p.139, Dantzig says: "Banish the infinite process, and mathematics pure and applied is reduced to the state in which it was known to the pre-Pythagoreans".

It is very clear from Dantzig's developmental study of mathematical technique that the tremendous new stress on infinite process after printing provided both the means and the incentive to translate all kinds of spaces into one another. Print did this encyclopaedically mainly by translating every kind of culture into itself, but it also created the means and incentive to recover the quality and experience of pre-literate human experience and pre-Pythagorean mathematics. It was incidental to this reconquest of the primitive that Western man invaded the domain of nuclear spaces. The technological means of translating our flat lineal world of rational space into the multiple modes of touch and sound--this was done by electronic technology which by-passes our age-old alphabetic technology.

Whenever man has suddenly attempted the translation of one kind of experience into another kind of experience, a human crisis has occurred. On p.171 of Number Dantzig notices "the genesis of the conflict between geometrical intuition, from which our physical concepts derive and the logic of arithmetic. The harmony of the universe knows only one musical form--the legato; while the symphony of number knows only its opposite--the staccato".

Speech itself is a staccato stutter which may well have been preceded by a human technology of legato gesture. It is characteristic of our time that we readily investigate such concepts simply because we can now, in an electronic age, cope with all levels and aspects of a situation as simultaneous rather than as sequential. We now are compelled to have the sophistication of a Georg Von Bekesy able to entertain a plurality of scientific modes of investigation.

In a multi-media world it is quite unthinkable that we can have a uni-lateral culture or science. We are in great danger at the present of sacrificing the whole of our Western culture with its unconscious bias based on alphabet and printing. It is only bu understanding the operation of media in the swift making and unmaking of cultures that we can hope to sustain the properties uniquely valuable in each medium. Our notion of "content" renders us quite helpless in defining or defending the role and value of the audible as compared to the visible. We shall appear to posterity as very pathetic guardians of traditionally achieved values when we speak of preserving the "content" of this or that culture. This subliminal automatism of mental gesture on our part does not even permit the defense of the technology of literacy from which unwittingly we derive the notion of "content".

The entire unity of Western culture may perhaps be conceived as an extended parallel between the operation of mathematics and of alphabet in reverse directions, as it were. To-day the

reverse antagonism ends with the computer assuming the task of automatic translation of one space language into another, and thus making all spaces simultaneously available much in the manner of a Unesco session. Having during many centuries been braced to sustain the struggle between the technology of the alphabet and the technology of number we now find ourselves floundering when this entire strain passes from the human to the mechanical domain. Many parallels occur in other media as in literature when confronted with movie, radio, and television. Perhaps the most frequently noted area of distress is that which concerns the relation of "The Individual in a Mass Culture". George Gerbner in the June 18, 1960, issue of the Saturday Review has a fine essay on this problem which it seems to me he states in moral terms, rather than in terms of technical understanding of what is happening. The individual does not exist in a pre-literate world. It may be quite impossible to retain him in a post-literate world. This seems not to be a moral question, but one of existence itself. Kept on a moral plane the issue is likely to be debated until there is no individual or society. But on a technical plane, the problem is to ascertain the role of various technologies in the emergence of the individual from the tribe and to act accordingly.

Radio, as discussed in this report is a mighty anti-individual force recreating all the conditions of tribal awareness. If our highly literate individualism compels us to discuss the role of radio until radio has abolished us, then it is only true to say

that radio hath eliminated the phonetic alphabet. It would be desirable to say that before this had happened a jury of trained minds, fully cognisant of the operation of radio in the brain-washing of other media, voted to permit radio its unqualified triumph over the visual faculty, in the organization of all human concerns. I do not think that there is the slightest indication of any human wish to achieve this sort of detachment. Even where the possibility of such detachment is easy of realization, many considerations crudely designated as vested interests induce men to turn away from the understanding of media.

In my personal experience, I found it quite easy this year to communicate the most difficult points about media to Grade XI students in a few hours. It would have been quite impossible to get the same matters across at the adult level.

INTRODUCTION TO SPEECH

"Speak that I may see you".

"Let us draw nearer to the fire and see what we are saying".

"Man is distinguished from the brute by the power of speech".

Speech, as a medium which employs all the senses at once in harmonic ratios, as it were, draws attention to the ambition of Richard Wagner, the composer, to produce a new art form which would orchestrate all of the arts in a single experience.

What is happening in the electronic age may seem contradictory. On the one hand there is an extension of each of our senses which amounts to the externalization of our sensorium. On the other hand there is the unified field of experience and multi-media created by the mere fact that the electronic is simultaneous no matter how many modalities or senses or media are in play.

Not only are the individual media "languages" in the sense that they are syntactic patternings of experience, but the electronic dimension forces upon our attention the need to harmonize the various media in the way in which the many forms of human speech harmonize our various senses.

Edward T. Hall, in The Silent Language (Doubleday 1959) is concerned with working out a grammar capable of providing tools for analysis of any cultural situation. As an anthropologist he approaches cultures as silent languages. But the student of media will quickly discern how to adapt his tools of analysis to media study. So far as the present approach to the understanding of media is concerned, the whole of The Silent Language is relevant.

Hall's concept of "the organizing pattern" concerns the fact that "there is no such thing as 'experience' in the abstract, as a mode separate and distinct from culture". Hall is saying here, in effect, what I formulate as "the medium is the message". I think he could well do with some study of the ways in which the dominant technology of any culture simply repeat themselves in the variety of matters offered by our senses, individual and collective.

Since speech is itself a master technology, it goes without saying that the Sapir, Whorf, Hall, Trager, Lee axis have long followed this line of study. Not being perhaps particularly familiar with the types of cultural analysis directed by the artists of this century toward human technologies as art forms, the social scientists have been unduly shy of a plenary art approach to technology.

In The Books at the Wake, by James Atherton (Faber 1960) it is mentioned Finnegans Wake is a history of writing. "We begin with writing on a bone, a pebble, a ramskin...leave them to cook in the muttering pot: and Gutenmorg with his cromagnon charter..."

The problem for the artist in our time is to say everything at once, and this is the problem in a variety of ways for every kind of person in an electronic age.

In these few words from Finnegans Wake, Joyce is saying, amongst other things, that the dawn of human culture (Gutenmorg) is a cromagnon (or primitive affair) but also Gutenberg the dawn of the Renaissance accelerated our rediscovery of the cromagnon

beginnings of human culture. Letters, the language of culture, then given the new stress of print, hastened our rediscovery by historical analysis of the pre-literate cromagnon world. Letters translated us out of the all-at-once auditory and tactile world of pre-literate man, while Numbers The Language of Science (Tobias Dantzig Anchor Books No. 67) developed parallel with letters as a means of translating the visual and the literate back into the non-visual and the tactile.

The artist faces the problem of responding to this type of awareness with new forms of relevance for mankind. Pre-literate society enthroned the artist as medicine man. Post-literate society (the electronic) must enthrone the artist as navigator.

Since the purpose of writing was to translate a non-visual multi-sensuous world into a picture or visible world, it is not strange that we should be confused to-day. For electronic technology does not merely translate the pictorial back into the audible and the tactile; it also presents all of the senses directly and without translation of any sort.

PROJECTS AND QUESTION - SPEECH

1. Devise ways of detecting the sense bias in languages and cultures.

2. Do highly literate people have a different way of utterance and expression from pre-literate and semi-literate people?

3. Consider the problems of speech in those whom some sense is defective. The deaf, the blind, etc.

4. Speech as organized stutter is based on time. What does speech do to space?

5. If speech is organized stutter, is stutter disorganized speech?

6. Devise ways of checking from one language to another the dominant senses stressed in the utterance of those tongues and the natural accompanying gestures of body and face.

READINGS AND SUGGESTIONS - SPEECH

The Silent Language, Edward T. Hall (Doubleday 1959)

Number the Language of Science, Tobias Dantzig (Anchor Books No. 67)

The ancient Oracles at Delphi and elsewhere were said to have had elaborate communications systems. By the time their royal clients arrived at the shrine, a fairly complete idea of the clients' problems had been received.

What was the advantage to all concerned of dealing with the clients' problems in a cryptic way? Why do oral societies rely heavily on aphorism? (See *The Waning of the Middle Ages* Huizinga)

Why should interpersonal dialogue be considered more nearly equal to the highest modes of the learning process? Why is the study of speech reach new planes of clairvoyance in the age of the tape recorder?

Experiments in Hearing, Georg Von Bekesy (McGraw-Hill 1960)

Sensation and Perception in the History of Experimental Psychology, Edwin G. Boring (D. Appleton-Century Co., N.Y. 1942)

Boring provides clues to the changing attitudes and theories of the Western world toward our various senses.

A phonetically written language will inevitably develop the habit of making words refer to things. A pre-literate language, on the other hand, has no such habit. Word is thing. The work of Dorothy Lee and the work of Bronislaw Malinowski on native speech habits documents this aspect of pre-literate language. A good deal of their material is embodied in "Thinking Through Language," which was prepared by E. S. Carpenter a propos of the

[illegible] were enclosed in this report.

Almost nothing has been done to study the effect of phonetic writing on our attitudes towards "meaning". In ETC Magazine for winter 1955, Richard [illegible] has an essay on "What Phonetic Writing did to Meaning" (p.[illegible]ff) - "What our culture to-day in part is confronted by is the collapse of a 'picture theory' of language".

Scientific American Magazine, essay on LOGLAN: James Cooke Brown, June 1960, Vol. 202, No. 6, pp.53ff.

"This logical language is now being synthesized on modern linguistic principles, largely to examine the hypothesis that the world view of the members of a culture is determined by the structure of their language.

CHART INTRODUCTION

Archimedes said: "Give me a place to stand and I will move the earth".

Any manipulator of any medium whatever does have such a place to stand. He takes his stand upon the human sense of eye, or ear, or touch, or taste, or movement, which enables him to move the entire human community.

The chemist Wilhelm Ostwald formulated a theory of color, around the turn of the century, which when applied to media offers many advantages to the observer. Dr. Ostwalds "Colour Equation" is that C+W+B = 1. "This Equation, in which C, W, or B may assume any value from 0 to 1 is the complete expression for the optical stimulus which gives rise to the colour of every object in our surroundings; C representing the amount of Chromatic, or "Full-Colour" stimulus, W the amount of White stimulus, and B the amount of Black stimulus. The real meaning of the Equation, therefore, is that the amount of stimulus our sensorium is able to receive when we focus our observation on a given surface, under a given illumination, is a constant quantity. The colour of this surface may be pure Black, pure White, purely Chromatic, or it may consist of a mixture of any two, or of all three of these elements; but the total amount of stimulus which implements our Colour Sensation is always the same under the same light, and the same accommodation of the eyes".

Any medium necessarily is constituted by some ratio or proportion among the human senses. All media are necessarily extensions in technological form of one or more of our senses. The electronic

media together add up to an externalization of our sensorium. No change in technology can touch us save by altering the existing ratio among our senses. The nature of sensation being itself comprised of a ratio among our various senses, any increase or decrease of intensity in any sense area immediately affects our awareness of the other senses.

To refer this to media terms, I would say that the nature of phonetic writing translating the audible into the visible gave an intensity to retinal impression that caused corresponding diminution of tactile and auditory experience in the life of the scribe and of the man of letters. In fact, when dealing with older media, the folklore of observation so established is far richer than any skill or labour of psychological measurement could make it. I would say this is true of print, but this scarcely excuses the testers from their total omission of study of the effect of print reading upon our senses.

In the following charts, I have layed out the sense factors as they appear to be involved. The principles employed are explained in a verbal essay accompanying each chart. For the most part these charts are psychological hypotheses or arguments affording plateaus for measurement and study. But much of the measurement and study can be done in person-to-person dialogue in any group of students or adults.

Since television, for example, certain new trends have strongly declared themselves in the sense lives of North Americans. Once the hypothesis is presented that there is a direct correlation

between the properties of a new medium of communication and our sensory preferences, it is not necessary to tell people what these properties or new preferences may be. They can discover them for themselves. Between "program content" and changing patterns of sensory or experience preference, all the testers in the world have not been able to establish any correlation whatever. But they are not discouraged. Between the comics and the incidence of crime they continue to strive to establish a correlation. But between the tactile character of the television image and the preference for small cars and paperbacks nobody has tried to discover any relationship.

Would it not be shocking to the man of print culture to be told that the sudden craze for even high-brow paperbacks was directly tied to the tactile character of the television image? Of what avail is moral preference and taste, if the facts of experience do not support them?

SPEECH

Our media charts here are not the result of arbitrary choice, but are concerned with the senses mainly involved in a particular medium. These charts are deliberately designed as do-it-yourself kits for teachers and students. Since all of us are involved, daily, with the use of these media, it is quite feasible to sharpen our perception and judgment of them by checking our own experience. The scientific approach to these media has tended so far to be based upon the perception and retention of the supposed "content". This conception, unwittingly borrowed from the nature of the print medium, permits endless, precise quantitative study which has nothing whatever to do with the nature of media.

Speech is the only medium I know of with the possible exception of an open fire which involves all of the senses at once. It would seem that all of the senses tend to be in Low Definition (L-D) (that is, that the Structural Impact (S-I) involves all senses in Low Definition (L-D)) which implies that our response (Subjective Completion (S-C)) involves a high degree of participation of all senses in order to strengthen what is given to us in such an imperfect condition.

Must we regard as a primary asset of communication the incomplete and the imperfect? If so who is to say how imperfect and incomplete we dare get under the conditions of this or that medium in order to step up the participational response to the utmost?

A NOTE ON [illegible] L-D, H-D

[illegible] the [illegible] entirely [illegible] of [illegible] than speaking [illegible], when any [illegible] is [illegible] to one or another [illegible] it seems to require [illegible] [illegible].

So constant is the operation of this law in the case of various media that as soon as it is known that the S-I (i.e. Structural Impact or Impression) of any medium is in H-D (High Definition) it follows that the S-C (Subjective Completion or Response of the receiver) will be in H-D (High Definition also, but not necessarily for the same senses. Thus a High Definition (H-D) auditory image such as radio has a S-C (Subjective Completion) in High Definition (H-D) visual effect. (By High Definition is meant detailed and full volume of information or impression provided to any sense whatever).

When, however, the S-I (Structural Impact) is in L-D (Low Definition) as for telephone, the S-C (Subjective Completion) [illegible].

It outrages the psychological [illegible] to be told these things, [illegible] are true, because he seems to suppose that it is [illegible] to utter high secrets except in technical language.

My associates and I did two major tests of media which had [illegible] significance from the point of view of the psychological [illegible] no meaning. For example, when we repeated our simple [illegible] in High Definition (H-D), having first done it in Low Definition [illegible] found that radio, a High Definition medium, improved its

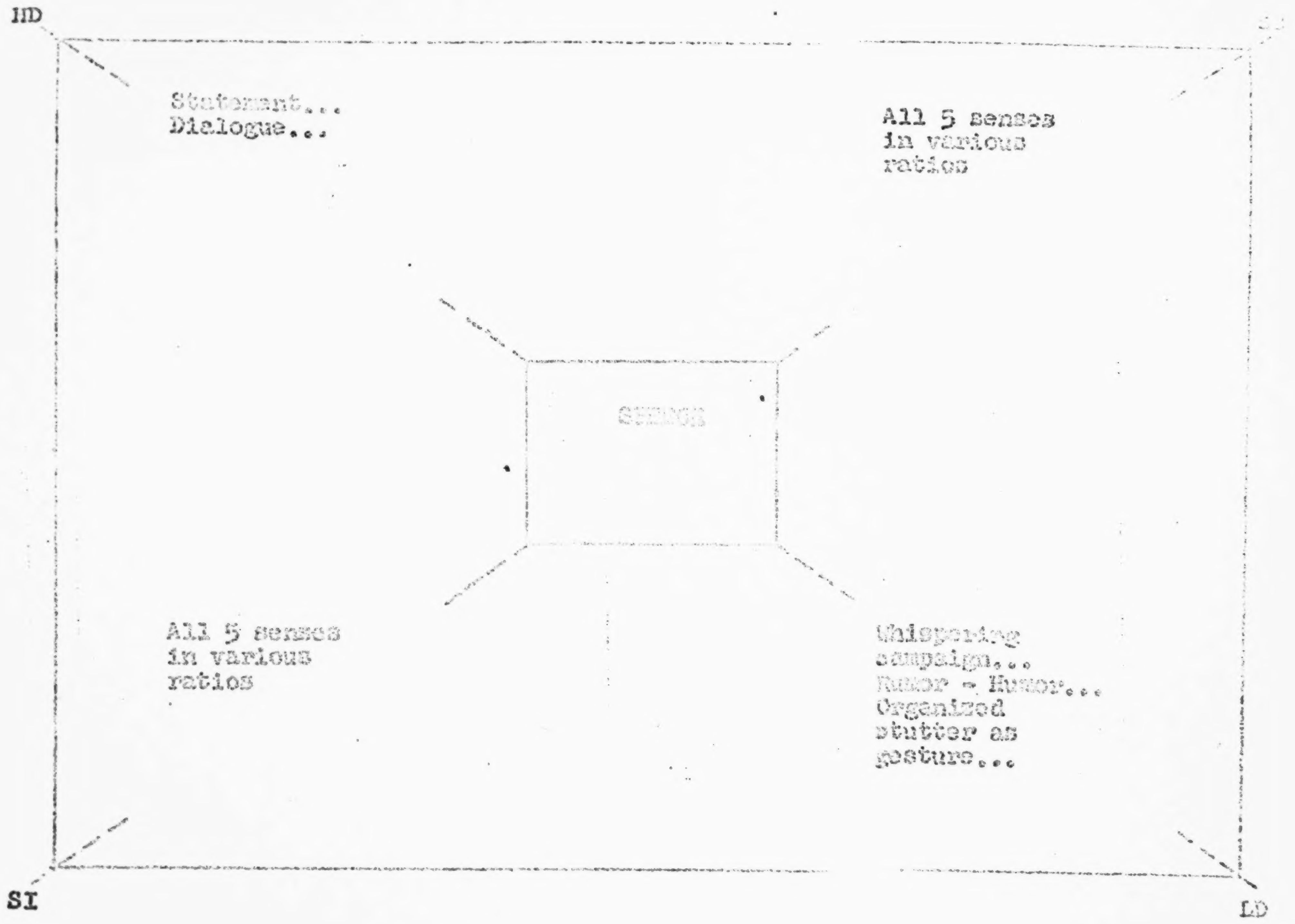
position, whereas television, a Low Definition (L-D) medium worsened its position or its level of performance.

According to this chart method, anybody could predict when any given medium will improve or worsen its position or level of performance.

Any High Definition (H-D) medium benefits from additional gimmicks and intensities. But a Low Definition (L-D) medium does not benefit from High Definition (H-D) treatment.

"High Definition" and "Low Definition" are phrases in favour with BBC analysts. I first encountered these phrases in McWhinney's book The Art of Radio (Faber & Faber, 1959) and these terms led me to investigate the point of reversal in shifting from High to Low Definition.

Dick Evans at the University of Houston opines that it would take months for himself or any psychologists to set up adequate tests for my hypothesis. My simul-casts would never have been done at all had it depended upon psychological testers.


HD
Statement...
Dialogue...
All 5 senses
in various
ratios
All 5 senses
in various
ratios
Whispering
campaign...
Rumor - Humor...
Organized
stutter as
gesture...
SI
LD

INTRODUCTION TO WRITING

The Greeks made a myth about King Cadmus as he who introduced the phonetic letters to Greece. The myth says King Cadmus sowed the dragons teeth and they sprang up armed men.

H. A. Innis has devoted an entire book to explaining the meaning of this myth. The book is Empire and Communications.

A myth is the explaining of a complex action and reaction in a few words. The phonetic writing permitted the spread of writing on cheap materials like papyrus which could be swiftly transported over land enabling men to organize armies at a distance. In the same way, phonetic writing was able to take over many languages and cultures in the Greco-Roman name. It is a one-way conquest since the other peoples, while being taken over, are quite unable to take over themselves.

Phonetic writing is, above all, a way of translating the audible into the visible. The oral and tangible world of the pre-literate man is translated and made explicitly visual by the phonetic alphabet. This is the traditional distinction between the barbarian and the civilized man. The barbarian plays it by ear. The civilized man plays it by eye. The barbarian lives in the all-at-once world of many directions and many levels of meaning at a single moment. Whereas the literate man lives by the eye, one-thing-at-a-time, one direction at a time, one level at a time. The man of the written word has at command an instrument of organization and of analysis which seems quite mysterious and superhuman to the man of the ear. The movie of the

Bridge over the River Kwai is a full length dramatization of this clash between the men of the eye (the English) and the man of the ear (the Japanese colonel). The practical one-thing-at-a-time men are quite able to make the bridge, but quite unable to control its uses.

The translation of the non-visual world into visual formulas continued educationally, and legally, and politically, throughout the Medieval period with ever-increasing stress on visual system in all levels of organisation and knowledge, until the time when Gutenberg gave a new meaning and intensity to this visual stress.

Writing does not occur in Nomadic societies, but only after people have developed the special skills associated with sedentary life. This specialism extends to the sensory life as well, and writing becomes possible when a dissociation occurs among the senses. So-called Euclidean space, i.e. uniform, single-plane, homogeneous space, is unknown until men have learned the art of writing phonetically which is to say the art of translating the non-visual senses into a uniform, spatial language. (See The Sacred and the Profane, by Mircea Eliade, who shows how Euclidean space is unknown to pre-literate man.) Dantzig, throughout his book on Number, holds to the theme that mathematics, especially since the Renaissance, has been characterised by the effort to translate Euclidean space back into the other senses. Especially now with the omnipresence of nuclear spaces resulting from the development of electronic technology we no longer live

in Euclidean space in the West. The new media of communication translate all events into nuclear time and space configurations.

We are in exact antithesis to Euclidean man of 3000 years ago who was totally engaged in translating all of his institutional arrangements from auditory and tactile into visual terms. To-day, after thousands of years of organizing all of our experience in visual terms, a nuclear technology drives us in the direction of organizing even the visual in non-visual forms. The front page of a newspaper appears to the eye, but is organized by telegraph. The newspaper page is thus a nuclear field of events.

In a word, all that Western man has done since writing began he is now reversing. The purpose and challenge of writing cannot be the same, therefore, as when we were engaged in the opposite move of translating man's age-old primitive heritage into visual forms. When Rousseau proclaimed that man is born free, but is everywhere found in chains, he would seem to have been straddling between these two worlds of the primitive and of the nuclear. Because the chains which bind man are the institutional arrangements which he has contrived by means of visual organization and codification of his non-visual life.

PROJECTS AND QUESTIONS - WRITING

1. What would be the problems of introducing the phonetic alphabet to-day into Japan and China?

2. Would the consequence of introducing the phonetic alphabet into China to-day be as drastic as when the Romans introduced the same alphabet to Gaul?

3. Will the ideogram survive in some new roles in the same way as the printed book finds new work to do in the electronic age?

4. What are some of the advantages of the ideogram over our alphabet?

5. Does a form of writing which involves complex situations at a single glance favour cultural continuity and stability?

6. By contrast, does a form of writing that favour attention to one-thing-at-a-time foster instability and change?

7. In other words, is the man of the ear a conservative, and the man of the eye a liberal?

8. Why should writing weaken the human memory? Pre-literate men amazed at the efforts of the white man to write down his thoughts and sayings ask: "why do you write, can you not remember"?

9. Why should a pre-literate people have no concept of words as referring to things, but only of words as being things?

10. Is the "content" of writing the medium of speech? Is it possible for any medium to have a content except it be another medium?

11. Is the medium the message?

12. Is it possible for a mathematical proposition or demonstration to have content?

READINGS AND SUGGESTIONS - WRITING

Empire and Communication, H. A. Innis, Oxford University Press, (1950)

"The Chinese written character as a medium for poetry, an Ars Poetica", Ernest Fenollosa, N.Y.; Square Dollar Series.

The Hand-Produced Book, David Diringer, Hutchinson's Scientific Publications (1953)

The Voices of Silence, Andre Malraux

The world of sculpture is poised on the frontiers between sight and sound, resonating with a vocal quality, but not being enclosed pictorial space.

The myth of Cadmus directly concerns the first effects of the invention of phonetic writing. May this also be the case with the myth of the Gorgon? May one effect of print have been to turn the mind to stone, even in the moment of imperishably arresting the moment of thought?

Consider the nature of myth as including simultaneously the causes and effects of a complex process.

WRITING

In the case of writing by means of phonetic characters men [illegible] how to translate the multi-sensuous thing that is spoken, [illegible] into one sense only. The peculiar effect of translating [illegible] senses of the spoken word into the visual mode of writing [illegible] abstract one sense from the cluster of the human senses. [illegible] abstraction and translation of many senses into one [illegible] naturally resulted in a change of ratio among the senses.

It is the advantage of these charts that they enable one to spot readily the components which enter into the experience of any one medium.

One can, then, with equal readiness, spot the omitted senses [illegible] remain to be filled in. In the case of writing, all the [illegible] except sight. This is a major reason why the phonetic reader [illegible] very strongly introverted. He has so much to fill in. While the written form or manuscript stepped up the visual form of experience [illegible] relatively High Definition (H-D), print as technology stepped [illegible] very high indeed.

Once more, the advantage of this chart method of study is that once you know what properly applies to any corner of evidence in the chart, it is possible to fill in a good deal that belongs in the other corners. For example, if you know that early movies [illegible] visual in Low Definition (L-D), and that later movies were visual in High Definition (H-D), you would already know a great deal about what characterized early and later movies in S-C (Subjective Completion) and L-D (Low Definition).

[illegible]

[illegible] procedure was followed by researchers recently in the [illegible] of carbons. They knew in advance enough to eliminate all but 57 possibilities.

These charts offer the possibility of direct participation in research to anybody who has had experience of these forms. Cecil Rhodes in the same way had only to wash the mud off the diamonds in his backyard. Another way of doing direct research on the impact of media is to ask yourself what popular myths and legends which occurred at the time of the new impact might contain relevant material about the social action of these new forms. For example, the myth of Cadmus, and the myth of the Gorgon. For later periods of the modern world it is necessary only to observe the changes which occur in already existing art forms, painting, poetry, music. Thus the new kind of writing represented by Montaigne's <u>Essays</u> or Machiavelli's <u>Prince</u> contain major evidence of the effect of printing on Western Europe.

Impersonal statements...
Reading aloud...
Organization at distance...
Individual equality...

Visual...
Speech...

WRITING

N/M - Visual Code (contrast Chinese Sculptural writing) for Speech...
Visual (L-D)...
Speech (H-D)...

Fantasy...
Lit. vs Life...
Cadmus myth...
Detribalization...
Greco.-Roman
Conquest of other cultures...

INTRODUCTION TO PRINT

Print would appear to be the first mechanization of a handicraft. A similar technology seems to have been achieved much earlier in Korea, and it is surely no coincidence that the Koreans are the only other people who are known to have developed a phonetic alphabet.

Without the abstraction involved in a phonetic alphabet, the breaking up of the senses necessary for print technology would seem to be impossible. The basis of print technology is the extension of the phonetic alphabet principle from sound to movement. Just as the phonetic alphabet separates sound from meaning, so print separates letters from movement. The motions of the scribal hand are broken up into movable types. Static segmentation of the scribal motion is the base of print technology, leading to the book which is the first teaching machine.

Since Gutenberg, the mechanization of many kinds of motion have been achieved. The principle is always the same. Segmental analysis of the total action involved, and the laying out of this action as a series of static repeatable segments in what we have since called the assembly line. Such assembly line necessarily involves uniform, repetition of a specialist action. As a form of production, it is now ending with the advent of automation.

Automation depends upon an exactly synchronized information flow from electronic tapes, and substitues the multi-levelled complex for the single-plane assembly line.

In the age of John Gutenberg, people did not understand the kind of revolution that had occurred with printing. Rather, they thought that it was a means of providing ordinary people with

instructional materials. The book as the first form of mass production made the identical item available for all men.

As compared with the laborious pace imposed upon the manuscript reader, the reader of the printed page could move as if upon Macadamized surfaces. The narrow and arduous track of learning over-night became a throughway. When information movement undergoes some striking alteration in time, or space pattern, the form of human association and knowledge undergo similar revolution. When print made all knowledge available in uniform and repeatable form, what we call Renaissance individualism and nationalism appeared at once.

To-day, if the only means available to man for self-expression were the forms of commercial advertising, self-expression as an aim or goal for educated man would quickly fade from the picture of our lives. With print it became possible for the first time to dream of self-expression and of earthly fame. Because the exactly repeatable forms of print made possible the extension of the private image and private point of view on an enormous scale. By manuscript means, it is quite futile to dream of publishing oneself to the world, and to-day once more men who must use the great collective forms of movie and broadcasting have very little opportunity for self-expression.

Print made possible individualism because the book as private teaching machine fostered initiative and self-reliance. The book created the ideals of inner self definition and inner goals.

the printed page could by its exactly repeatable form open up the markets of the vernacular tongues where before the market was intended to be for Latin books alone. The same repeatability of the printed form made possible totally new aims in education; namely a uniform training for the whole community.

Nationalism was born of this possibility of organizing an [illegible] language area on a uniform political basis. Print became the basis for a kind of national mobilization of manpower. Just as armies depend upon uniformed men acting as replaceable parts in a smooth working military machine. So the uniformly educated citizen body becomes an inexhaustible manpower pool. Napolean was the first to manipulate the resources of print in this way, mobilising public opinion on one hand by his press, and manpower by means of the citizen army, on the other hand. Print in this respect afforded to Western man a vast new staple or natural resource which gave to the political power direct access and control over the citizen mind,

If print was the first form of mass production, it was also the first means of providing markets with uniform commodities. Uniform commodities lend themselves quite naturally to uniform pricing. The very idea of uniform pricing was as revolutionary as uniform commodities. Handicraft economies are related to bazaar type markets where prices are the result of much haggling. To-day, under electronic conditions, it is interesting to watch the pressures whether in collective bargaining in motor sales, or in discount houses, which are driving us back to the conditions

Introduction to [illegible]

[illegible]le and the oriental [illegible]

[illegible] after print [illegible] the discovery of the split between [illegible] and [illegible], and also between the ruler and his subjects, [illegible]paration of function at many levels is characteristic of [illegible]. Today, the reverse is true. Specialism disap[illegible] with decentralization. In management and decision-making, [illegible]ople to-day must have a kind of over-all competence in [illegible] aspects of an operation. Encyclopedism and fusion of [illegible]ation is as characteristic of the 20th century as specialism [illegible] been previously. In fact, we have come to use the word specialist as a term of dubious praise.

PROJECTS AND QUESTIONS - PRINT

1. Let us try to discover any area of human action or knowledge unaffected by the forms and pressures of print during the past five centuries.

2. If the forms of print have shaped all the levels of action and organisation in the Western world up until the advent of nuclear technology, does this explain and justify the type of stress which we allow to our printed forms in educational establishment?

3. If a nuclear technology is now succeeding to the mechanical print technology of the past five centuries, what problems does such a transition present to the educator? To the political establishment? To the legal establishment?

4. What would happen to the society that did not recognise or identify these problems at all?

5. What happened to Medieval education when it failed to understand the nature of print?

6. Consider why anthropology with its pre-literate concerns should have so much in common with post-literate and nuclear forms of communication?

7. How did uniformity and repeatability of the print production process affect human arrangements in time and in space?

8. Why should the speeding of information flow for the print reader create historical perspective and background? Why

should the much slower information flow of the manuscript make such background impossible? Why should the electronic speed of information flow eliminate historical background in favour of "you are there"?

9. Why is homogeneity of space and time arrangement natural under print conditions of learning?

10. Why was it revolutionary for Columbus to assume that he could keep moving in a straight line, in one direction? Why are there no straight lines in Mediaeval maps? Why was it unthinkable for them that space should be continuous and homogeneous?

11. Why should the Columbus pursuit of the straight line in navigation have been necessary in order to discover the round earth?

12. Are the flat earthers on strong ground in terms of our Western devotion to Euclidean space?

13. In garment making and hence in clothing styles, the straight seam was impossible before the sewing machine. Trace some of the implications of the straight line and of mechanism in one or more other fields of human organization.

14. How much is our notion of "content" affected in the case of printing by the blank page as filled with movable types?

READINGS AND SUGGESTIONS - PRINT

Bias of Communication, H. A. Innis, Oxford University Press,

[illegible])

Explorations in Communication, Marshall McLuhan & E. S. Carpenter,

Beacon Press, (1960)

From Script to Print, H. J. Chaytor, W. Heffer & Sons, Cambridge,

[illegible])

Ramus, Method and the Decay of Dialogue, Walter Ong, S.J.,

Harvard University Press, (1959)

A propos of this book, Father Ong traces the rise of habits of visual organization of knowledge in the later Middle Ages before and after printing. Dialogue is necessarily non-visual and involves minds in maximal participation in the processing of knowledge. Renaissance method increasingly eliminated such participation.

To-day, with endless non-visual forms of knowledge presentation, we turn again to dialogue.

The Right to Learn, Glen McCracken

The Right to Learn underlines the unexpected effects of one medium upon another. With television aspects of the printed page not available to the person dealing with the printed page alone.

The movie as sequence of still shots has deep affinities with the Gutenberg assembly line of movable types, but whereas the movie viewer is in the role of the camera, the print reader is in the role of projector. It occurred very early to the manipulators of the printed word that print afforded a means of snapshotting the mind in action. In other words, a means of self-investigation of the type undertaken by Montaigne in his essays. The whole Senecan enterprise in prose is part of this snapshotting of the mind in action. Self-investigation is the correlate of self-expression. In the same way, self-portraiture among the painters is the correlate of perspective, or vanishing point and point of view.

PRINT

Here is the perfect example of a transformation of a medium by stepping up the degree of its definition. What may appear as quantitative improvement brought out qualitative changes.

This should suggest to us ways of observing the altering ratios of sense as producing a totally new focus of attention and awareness.

Just as speech is "contained" in writing, so with printing. At first print strove to imitate the texture of the manuscript. The manuscript was "contained" in writing.

The subliminal or Low Definition (L-D) presence of one medium in another has conferred upon the Western world an obsession with "content". This is easily checked. As for example in scientific formulae which contain nothing whatever but which are structures commanding other structures. With the prevalence of multi-media experience in the past century, artists and scientists alike have sought "pure" music, "pure" poetry and in general to purge one structure from other structures. In poetry and criticism this has meant the repudiation of "content" as having validity or relevance.

H-D - Uniform repeatable...
Lineal...
Sequential...
Point of view...
History...
Calculus...

H/A Visual (H-D)...
Speech (L-D)...

Empathy...
Individualism...
Nationalism...
Authority...
Teacher as projector...
Assembly line...

INTRODUCTION TO PRINTS

It would be a sufficient justification to include this section on prints if only to bring to the students' attention the work of William M. Ivins, Jr. His Prints and Visual Communication (Routledge and Kegan Paul 1953) stresses the meaning which prints have had in the development of science. Until there was some uniform and repeatable means of transmitting non-verbal information, it was impossible for scientists to communicate. Mr. Ivins helps us to define a "backward country" as "one of those that have not learned to take full advantage of the possibilities of pictorial statement and communication". (p1) He spots, at once the disadvantages to knowledge of the "persistent habit of regarding prints as of interest and value only insofar as they can be regarded as works of art". (p1) He will receive increasing recognition as a master of media analysis, because of such critical awareness as this: "Historians of art and writers on aesthetic theory have ignored the fact that most of their thought has been based on exactly repeatable pictorial statements about works of art rather than upon first hand acquaintance with them. Had they paid attention to that fact, they might have recognized the extent to which their own thinking and theorizing have been shaped by the limitations imposed on those statements by the graphic techniques. Photography and photographic process, the last of the long succession of such techniques have been responsible for one of the greatest changes of visual habit and knowledge that has ever taken place and have led to an almost complete rewriting of the history of art as well as a most thoroughgoing revaluation of the arts of the past". (p2) Mr. Ivins does not merely offer

valuable data, he offers us better ways of perceiving data--an approach rather than conclusions. We must look on prints "from the point of view of general ideas and particular functions, and, especially we must think about the limitations which their techniques have imposed on them as conveyors of information and on us as receivers of that information" (p3).

To extend the kind of awareness, not only to prints but to all media is the aim and scope of understanding media.

The approach of Mr. Ivans readily reveals why historians until recent times "have rarely found anything they were not looking for". (p4) This remark of Mr. Ivans reinforces the insight of Siegfried Giedion in Mechanization Takes Command that "anonymous history" must be the students' main resource to-day. "Anonymous history" is without a point of view, since it is the actual mosaic of discoveries and developments which the collective and cooperative energies of men have achieved.

A private perspective or point of view directed towards such patterns is something for which we must now write a history, since it is a dated and dubious form of effort.

PROJECTS AND QUESTIONS - PRINTS

1. Why is it possible to give accurate verbal instructions for the construction of a bucket say, but quite impossible to describe a bucket? How does this problem relate to the importance of prints in the development of many forms of knowledge? (Ivans p.57)

2. A propos of p.50 of Prints and Visual Communication, consider some of the ways in which in other fields as well technical advance may be a setback for knowledge.

3. What has been the effect on the newspaper story of the line engraving? (Ivans p.98ff)

4. How did it happen that Dickens became a novelist by the accident of supplying copy for popular pictorial artists?

READINGS AND SUGGESTIONS - PRINTS

1. Look at the famous _Illuminations_ of Rimbaud as a kind of newspaper hodge podge landscape, the idea for which he seems to have picked up from the popular magazines of his time. Why should such amusing and ingenious adaptations of popular art impress the highbrows? Is highbrowism to-day an attitude of those of shaky literacy?

2. Check James Atherton's _The Books at Finnegans Wake_ for the very high degree of interest which Joyce maintained in the most commonplace forms of popular culture.

3. Why should Pablo Picasso take such an interes in American comic strips when the academic world does not?

READINGS AND SUGGESTIONS - PRINTS

<u>Prints and Visual Communication</u>, Wm. M. Ivins, Jr., Routledge and Kegan Paul (1953) London.

<u>Art and Geometry</u>, Wm. M. Ivins, Jr.

This book is concerned, among other things with the nature of Euclidean space. One of its themes is that it was not until the Renaissance that Western man finally freed the visual from the tactile. We have seen how print culture strongly stressed sequential one-thing-at-a-time approach to problems of organization of space and time.

1. What variations of attitudes to space and time might have occurred as a result of prints and engravings?

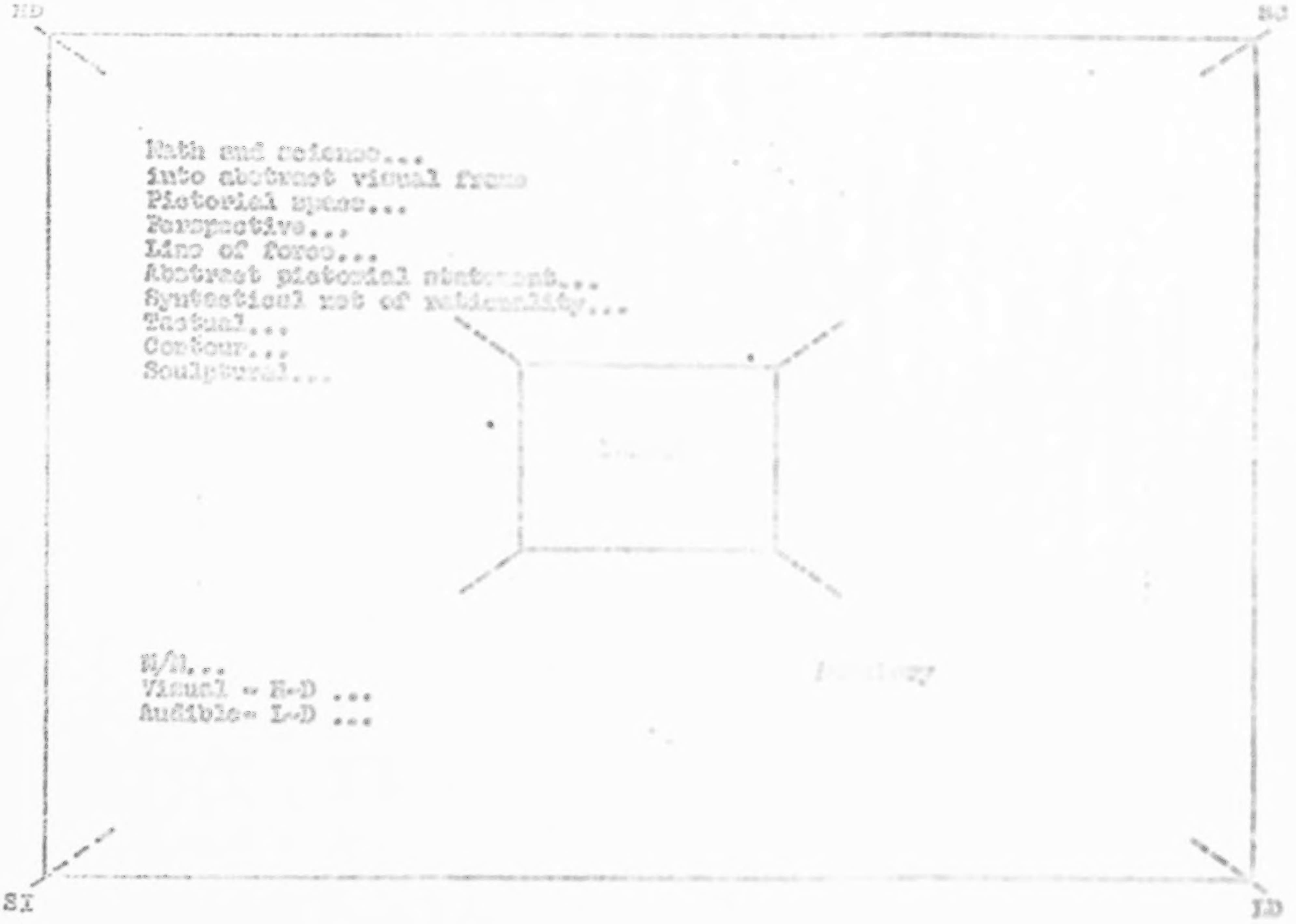
2. Would the preferred subject matters of the engraver provide a clue to the latent resources of the medium?

PRINTS

Prints like cartoons are of the lowest definition possible. Their fascination depends upon the systematic withdrawing of data. Note how such Low Definition (L-D) forms are automatically effective in other Low Definition (L-D) media such as television.

I have deliberately put the tactile component of prints in the High Definition (H-D) corner in order to challenge some attention. The tactile sensations are probably Low Definition (L-D) at best as compared with eye and ear. But all the more for that reason they would seem to imply and involve maximal participation from the perceiver.

Ivins suggested, in _Art and Geometry_, that the Greek geometric sense was profoundly tactual and that Euclidean geometry thus had to wait further development until the visual sense had been abstracted from the tactual sense in the Renaissance. (See T.V. chart for other tactile aspects).


HD
SJ
Math and science...
into abstract visual forms
Pictorial space...
Perspective...
Line of force...
Abstract pictorial statement...
Syntactical set of
Tactual...
Contour...
Sculptural...
M/M...
Visual = H-D ...
Audible = L-D ...
SI
ID

[illegible]

When someone like [illegible] takes a bit to have an existence in newspaper or on radio, or as an intellectual, it is very confusing to the categories ordinarily created by the movie medium. By and large, the newspaper accepts as newsworthy figures created by any medium whatever, whether sports, or radio, or theatre, or movies. In fact, if someone appears in the news who does not already have some existence in some other medium we think of them as just ordinary people.

The power of various media to shape and to project huge public images of private citizens is basic to an understanding of media. In the case of the newspaper, the image which is given to the reader is of the community itself. The public press presents a kind of group picture of the global human community, hour by hour. This image is made by means of a collage or assembly of dozens and even hundreds of small items much as a wire photo is achieved by means of numerous dots forming a stippled pattern.

The make-up of each page must tend toward a selection in order to include a very large range of human interests. The mosaic of human interests thus achieved creates a strong impression of depth and range so that the ordinary reader is quite satisfied that he has made a real contact with the collective life of the community under the dateline indicated at the top of the page. Of course, if a reader suddenly discovers that he is reading yesterday's newspaper, the sort of disillusionment and letdown is acute indeed. Jazz musicians use as one of their strong figures of speech the phrase that recorded music is as stale as yesterday's newspaper.

A newspaper seen on the kitchen floor [illegible] startling aspects unnoticed when in the hands of a reader. If a newspaper were used as wallpaper, it would be in order to notice its peculiarities of layout and design. Any newspaper page tends to have many of the characteristics of the [illegible]. By definition, no two items in a newspaper can have any connection one with the other. The only connection between any two items in a newspaper is indicated by the dateline. The fact that it happened on our planet on a given day affords the only logic or rational.

David Riesman once conducted an inquiry among students at the University of Chicago as to why people read newspapers. The only consistent reason discovered was so that people could achieve some privacy in public conveyances. Perhaps the other side of the same picture is in order that people in the privacy of their homes can maintain contact with the public world.

Our public myth or theory concerning the importance of the newspaper in our political lives is not only valid but worthy of the utmost study. It is literally true that our politics depend heavily upon the existence of the newspaper. So does our commercial life. A most helpful way of looking at all this is to look at the patterns of society before the newspaper existed. It is only necessary to imagine ourselves totally dependent for news on radio and television. One of the best ways of understanding a newspaper is to watch the stages of development which the press has undergone. When it consisted of a sheet or two, the press was little more than an editorial. At a later stage, the press set out to gather news in order to gather readers. Then, in order to

gain more readers it had to organize the distribution of news and the postal services began to grow. (See *The Bias of Communication* by Harold Innis, and *Mass Communication*, by Eric Barnow)

As Barnow pointed out, newspapers fairly soon discovered that what they printed was news. In fact, until they printed it, it wasn't news. This is a basic principle of understanding all media. A movie star is somebody who appears in movies. An author is somebody whose book gets published. The medium itself usually creates the commodity of fame and reputation.

In pre-print days, only very extraordinary people could be known beyond the borders of their own village. After print, an absolute nobody might become world famous. The newspaper carries this capricious aspect of publicity to the extreme.

An excellent way of discovering the form and meaning of the press medium is to watch its changed patterns as new technology intervenes. For example, the telegraph and cable services naturally had the most direct effect upon the newspaper, conferring upon it at once the dimension of "world telegram" or "globe and mail". And the items on the page were similarly altered. The individual news item, after the telegraph, tended to become even more isolated from any point of view or perspective. Correspondents from every part of the globe had only to neutralize their stories by withholding personal feelings for attitudes in order to simplify the job at headquarters of assembly of a daily global image of the new global village. So-called "objective" reporting is simply the omission

of point of view. The user either can find more easily with manual files. When such files pass to [illegible] the users at high speed, there is no possibility of arranging them in a multiple permutation. And in the electronic world of data processing, private point of view tends to yield to a group consensus. The all-at-once of instantaneous systems has very little room for the one-thing-at-a-time or private point of view of the pre-electronic arrangement of information.

PROBLEMS AND QUESTIONS - PRESS

1. Does the aspect of corporate or collective image of the community commit the newspaper to the job of exposing private exploitation of the communal image? Is there an inevitable clash between the public nature and function of a newspaper and the private nature of most or many of the interests in a community?

3. Consider the same news story as handled on radio and television, and in the newspaper. Do you think of any one of these ways of handling the story especially adapted to any particular kind of news? Does world news, for example, seem most appropriate to headline news? Does local news find its most appropriate form on the radio?

4. Which medium, press, radio, or television is most effective in gaining the participation of the viewer? Does the newspaper reader tend to be a mere spectator of events? Is the radio listener more closely involved? Is the television viewer most challenged to participate in action?

5. Does the newspaper typically create the outlook of the sidewalk superintendent in all community matters?

6. Is the job of the newspaper to dramatize the issues within a community?

7. How did the news photograph alter the nature of the newspaper and the news story?

8. How had the print affected the nature of news coverage prior to the photograph? (See Ivins' Prints and Visual Communication)

Projects and Problems — Group [illegible]

9. Are the instances of crime and calamities [illegible] to any degree [illegible] in a [illegible] of the news? [illegible] [illegible] as given [illegible] and [illegible] [illegible] [illegible] [illegible] [illegible] to the [illegible]?

10. Why should the newspaper [illegible] its daily reporting with historical perspective on any matter? (See [illegible] as newspaper urging to restore historical perspective.)

11. What devices does a newspaper employ to provide a sense of continuity from day to day for its readership?

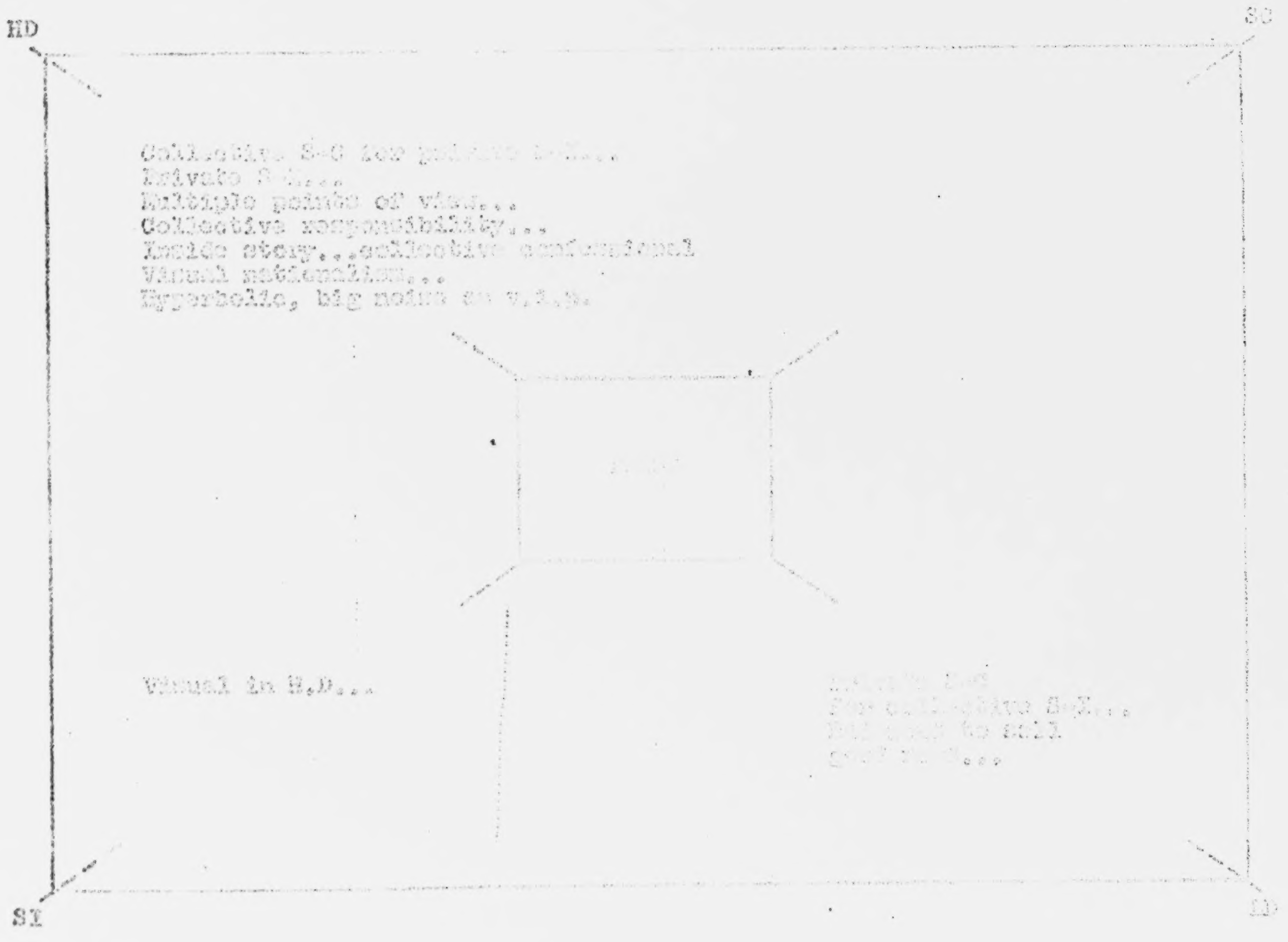
12. Why should the newspaper, in presenting opinions in such wise as to produce [illegible] opinions and attitudes, be a major means of mobilizing the [illegible] resources of a nation?

[illegible]

The advantage of this mosaic approach in dealing with the newspaper is that it enables us to appreciate the press as a complex work of art without being side-tracked by this or that "payload" or silly story. Just as art forms are musical modes of organizing our sense lives, so we have been hindered from seeing these forms in modern technology if only because they have been charged up to such high collective intensities. The teamwork involved in constructing such a daily pyramid as a newspaper so far exceeds any earlier human possibilities of organization as to make of a newspaper an unclassifiable art form. Having been taught for centuries that art is a private form of self-expression, we have no means of apprehending the artistic character of non-individual social activity. As [illegible] said in beginning a study of photography, nobody can commit photography alone. This is true of English, or any other mass media.

Media study serves to begin the process of alerting the perceiver to the art values in collective media. As the so-called mass media threaten the individual, surely his best comeback is private enjoyment of the mass media. For here he enjoys a one-way advantage. The mass media may be able to swallow him, but they cannot enjoy him.

2


HD
SC
ST
Multiple points of view...
Collective responsibility...
Inside story...collective confessional
Visual in H.D...

READINGS AND SUGGESTIONS - PRESS

1. At what point does the enlargement of type tend to push the printed word into the area of graphic art and design? Consider the British habit of putting headlines on separate sheets beside the newspapers. Does the headline as a form try to be a capsule story? Does it have its meaning in itself, or is it necessarily linked to a follow-up story? What can we learn about the headline form from its variants in radio and television? What are some of the uses of headlines made by John Dos Passos in his novels? Does the headline resemble the world of the newsreel? Since the printed word is itself a visual code for speech, does the headline form of print tend to break speech out of the code into actual auditory effect?

2. Are noisy headlines a substitute for shouting newsboys?

3. Wynn discussing Nasser's nationalist aims indicates that they are tied to a newspaper campaign. Let us ask ourselves whether nationalism would be possible without newspapers. If no, why? Is nationalism essentially visual in mode as compared with say radio? Does it involve the visualisation of a vernacular unity rather than the auditory experience of vernacular unity? How far can the auditory experience of vernacular unity extend? How far can the visual experience of national unity extend? Would radio have a nationalistic or merely tribal effect in grouping experience and loyalty?

4. What has been the effect of television programs in shaping the handling of news items and editorial discussions?

5. A propos of question 4, some journalists maintain that the effect of this on the newspaper story was to curtail length of coverage and to reduce items. Was the effect of television to inject a much stronger personal dimension in news commentary?

6. Reader surveys of reading habits of newspaper readers has strongly indicated that people accept the total page as a reading ration giving the same kind of attention to advertisements as to anything else. A. J. Liebermann, the Wayward Press section of the New York Magazine, reported how in the 1952 election a New York Times fan discovered that his friends who also subscribed to the New York Times did not know which side it was supporting. He took the following action to offset this deplorable state of affairs. He had a pro-Republican editorial from the times reprinted as a full page advertisement in numerous newspapers across the land, hoping to get some attention for these opinions in advertisement form which they had failed to evoke in their editorial space.

7. Consider why the effect of the telegraph on the newspaper should be to eliminate point of view in favour of field of pluralistic points of view?

8. Do headline's set as mandates much as dress models in shop windows? That is, if we read the headline "British furious with Ike" is this in effect an order to the British to feel furious? How would any large population know how to feel

[illegible] a large number of [illegible] daily [illegible]? Does this imply that the newspaper exerts [illegible] tyranny over our thoughts and emotions? Does it at least choose the subjects concerning which we shall think, and feel from day to day?

9. Does the press provide a sort of landscape background for personal and national experience? Do advertisements for national brands belong to the same landscape? If neither press nor advertising existed, would we be likely to have thoughts and feelings different from those we have at present? What happened in New York during the newspaper strike, a few years ago? Why should [illegible] advertising be the

10. See Mr. T. S. Eliot's poem "The Boston Evening Transcript". What does Mr. Eliot suggest in this poem is the function of a newspaper? Look at The Waste Land by Mr. T. S. Eliot--a poem layed out in the manner of a newspaper landscape.

11. See a book by K. Capek called In Praise of Newspapers. It is a kind of metaphysical eulogy of the personal lyric quality which newspapers introduce into life.

12. Why does the newspaper insist upon human interest? Does the newspaper get human interest from books and literature, or is it peculiar to the newspaper?

13. Why is Charles Dickens in a special way a novelist who derived his focus and techniques from the newspaper? How does the work of Edgar Allan Poe belong to the newspaper?

Readings and Suggestions - Poems - 4

14. Why should the detective story in the root of its form be tied to the puzzle? (A detective story gets its form from being told backwards like a symbolist poem, in which the writer begins with the effect he wishes to achieve and then makes the poem to achieve that effect). See Poe's essay "The Philosophy of Composition" in which he describes the making of the raven.

INTRODUCTION TO PHOTOGRAPHY

In his book Painting and Reality, Etienne Gilson points out that up until Giotto paintings had been things. From Giotto to [illegible], paintings have become things once more.

In his Prints and Visual Communication, William M. Ivins, Jr. traces the rise of the print with its "network of rationality" or mesh of lines for capturing the external world.

The minute mesh of lines, or statements about the external world suddenly yield in the photograph an image without lines. Reality is there as a total statement without syntax. It was as if by reversal that things drew themselves instead of being drawn. This automatic character of uniformity and repeatability which at first was felt in the printing press and in industrial output began about a century ago to characterize all levels of human activity. Handicraft values and habits of individual discrimination and enterprise seemed to be disappearing on all sides. But in the electronic age, do-it-yourselfness seems to return to all phases of human action, giving to the qualities of the handicraft a value higher than they ever had before. No where does this transformation appear more strongly than in the domain of photography itself. Whether it be private snapshots, or home movies, the skills of managing the camera receive ever more acclaim.

One immediate consequence of photography was to end the reign of perspective in painting. By holding up the human image with new salience and intensity, the photograph created a revolution in human clothing and personal appearance. Intensity of stress on visual values became especially characteristic of the human world. Where photography has not ruled the world of sense values, we still find stress on non-visual effects in clothing, on tactile values

for example, and in resulting indifference to drab and shabby appearances. The tintype arrived just in time to record a world in which visual values had not yet achieved any power.

Photography would seem to have created an extrovert activist and outgoing generation. For the photograph puts the viewer in the role of the camera eye--that is aggressive and eager to swallow all that it can see. It recalls the Fox-Movietone advertisement "Eyes of the World" with the roaring lion enthroned...Such however is not at all the image of the television monitor where the viewer is not camera eye, but screen rather. Does this mean that television will now give us an introvert generation?

PROJECTS AND QUESTIONS - PHOTOGRAPHY

1. What was the effect of photography on newspaper and magazines?

2. What did the photograph do to merchandising and packaging and promotion?

3. What was the effect of photography on international affairs?

4. A newspaper story does not necessarily cross language barriers. How about photography in this respect? Was the effect of the photograph to enlarge the domain of reporting and human awareness?

5. What effect did the photograph have on the manner of writing newspaper stories?

6. Did technicolor movies make travel unnecessary?

7. Is the effect of exact repetition by photograph an extension of the Gutenberg technology? Does this sort of repetition make for competition?

8. How does the photograph in advertising alter the form and use of words in advertising? Do similar changes in word layout occur in the newspaper as a result of photography?

9. How does plane travel relate to the world created by photography?

10. Is there more participation, less passivity in film clips than in a whole movie?

Projects and Questions - Photography - 2

11. What has been done differently indoors, and out of doors, since the photograph? Have not big cities had to spruce up since they began to be photographed in newspapers?

12. What has been the effect of the photograph on human attire from the tintype onward?

READINGS AND QUESTIONS - PHOTOGRAPH

Painting and Photography, [illegible], Routledge and Kegan Paul, London (1955)

Painting and Reality, Etienne Gilson

One way in which to see the nature of photography is to contrast it with our visual experience in the use of light through rather than light on. Artists like Gyorgy Kepes are experimenting with a new type of painting, more in line with our experience of seeing a city at night from the air—that is, a world in which light is not on the object, but comes from the object. Here is a type of experience which is characteristic of television and also of the world of stained glass. The painter Rouault, in his way, just like Seurat, in his way, would seem to have anticipated this technological change in our environment, by painting pictures as if on stained glass.

In the camera world of photography, the viewer is the camera eye. But in the world of television, the viewer is not the camera, but the screen. Psychologically there would seem to be a great gulf between these two roles. Is the camera eye world superficial and the screen world of the introvert television viewer a thing of profundity and depth?

1. Consider the theme of the family album as a motif in Western culture.

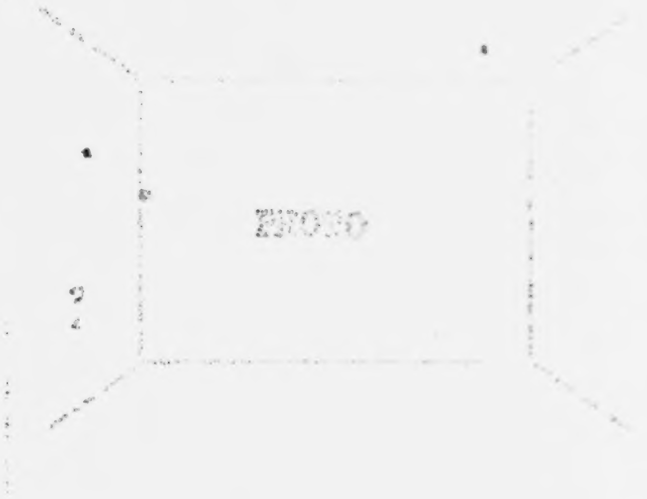
2. Is the photograph by way of being a scale model? Is the earth seen from the air itself a kind of photograph? To what extent does the photograph and the mail order catalogue intertwine?

PHOTOGRAPHY

William M. Ivins, Jr., in his *Prints and Visual Communication* (Routledge & Kegan Paul: London (1953)) traces the stages of visual syntax in prints and woodcuts all the way to that point of no return where photography provides a total statement without syntax. "With photography, however, we come to a kind of print that no one could have made before the 19th century." (p.116) He proceeds with his theme (p.128) "At last man had discovered a way to make visual reports in printer's ink without syntax, and without the distorting analyses of form that syntax necessitated.

To-day we are so accustomed to this that we think little of it, but it represents one of the most amazing discoveries that man has ever made--a cheap and easy means of symbolic communication without syntax." (p.128-9)

Total statement without syntax...
Dots and contours supplant
engraver's network...



Visual in N-D

Auditory...
Tactual...
Kinesthetic...
Sculptural contour in
place of line...

INTRODUCTION TO THE TELEGRAPH

Pre-electric telegraph was a very large enterprise in Napoleonic Europe so that as Innis points out when the electric telegraph appeared, England and America had the advantage of being backward countries in this matter. Having no prior investment in pre-electric telegraph they were free to go ahead with the electric form without loss of earlier equipment.

Whereas writing and printing, and paper, and roads, had deeply affected the patterns of human association and man's ways of organizing space and time, with the telegraph came the first breath of space-time. That is to say, when information can move instantaneously over considerable distances, space and time alike disappear into a new structure which has been called space-time perhaps because it contains neither.

In Arthur C. Clarke's Voice Across the Sea, p.8, Harpers 1958, Clarke gives some basic data on the experimental origins of the telegraph, as preliminary to his long account of the laying of the first trans-oceanic cables. On p.8 he mentions "Cooke and Wheatstone produced their first telegraph patent in June 1837, and carried out their first practical trials in the same year over a mile-and-a-quarter long line between two London railway stations". Sam Morse, the American painter, had produced his first working telegraph instrument in 1836. As Clarke points out on p.9 "the beauty of Morse's system was its simplicity. It is so simple, indeed, that we tend to take it for granted and forget that someone had to invent it. Earlier telegraph systems had involved many wires and cumbersome sending and receiving apparatus. Morse produced a telegraph that needed only wire (the earth providing a return circuit) and whose transmitter

was nothing more than a key to make and break the connection. By means of the dot-dash code, this single key could send any letter or combination of letters".

The telegraph and the wireless began to reshape our Western world more than a century ago. The entire structure of the assembly line and of movable types and of literacy was to be profoundly undermined by this electronic development. The telescoping of space and time already implicit in the telegraph contained also the principles of automation which would bring to an end the regime of the assembly line.

PROJECTS AND QUESTIONS - TELEGRAPH

1. Do you think the telegraph has had the greater influence in shaping our attitude towards time or towards space? Does it have to be called space-time when both time and space are relatively eliminated?

2. In writing, the medium of speech is encoded in visual form. In telegraph the same medium of speech would seem to be encoded both visually and audibly. By consulting a history of telegraphy, discover how far the originators of the Morse code accepted the pattern of print technology?

3. In a slower medium, time and space are not equally affected. Illustrate from the book, the newspaper and the private letter.

4. How could we determine the changing patterns of inter-personal life or of inter-cultural life which have resulted from the extension of the book and the newspaper? Look at the form of Pamela by Samuel Richardson to get a sample of what it felt like to be alive when the private letter was becoming part of daily life.

5. Do not the changing forms of literature and painting and music record our altered feelings about ourselves and about our ways of association?

6. Which of our media has confirmed us in the habit of thinking that the "content" of a medium is the main thing, as it were, and that the medium employed is merely a neutral "container" for such "content"?

7. For a century we have had a daily snapshot of the globe in the telegraph newspaper page. Does the structure and character of the telegraph page of the daily press tell us how we may expect to have to organize our approach to politics, and to the arts and culture of the future? Would the fact that people like Rimbaud and Mallarmé and Eliot and Pound have organized major artistic work in this telegraph pattern provide any help or guidance in this matter? Does the artist become a sort of radar screen for the electronic navigator?

8. Why do the daily readers of the newspaper fail to perceive that the ordinary layout of the page equals or exceeds the outrageous fantasy of the Surrealist poet and painter? Why in an age of multiple media which involve all our senses all of the time does it become necessary for the artist to play hopscotch as it were with the human senses in order that we may retain our integrity and unity of perception? Is this not what Bernard Berenson meant when he said: "The painter can accomplish his task only by giving tactile values to retinal impressions"? Is this not why many people get lost in the presence of modern art? Are they not looking for one sense when the artist is eagerly translating one into another for them?

9. Why is the uncritical and [illegible] especially prone to fall into this fallacy of single sense and single meaning?

10. How does this create a serious crisis for a print culture in an electronic age? Why does an electronic age inevitably favour the ear over the eye? Why does the act of hearing involve all directions at once?

11. Why should the sending or receiving of a telegram seem more dramatic than even the ringing of a telephone? What is there in the American set up which causes us to specialize the use of the brief telegraph form for grief?

READINGS AND SUGGESTIONS - TELEGRAPH

Voice Across the Sea, Arthur C. Clarke, Harper and Brothers, N.Y. (1958)

Broadcasting and Television Since 1900, Maurice Gorham, Andrew Dakers Ltd., London, (1952)

It happened over and over again in the early hours, as it were, of new inventions in the 19th century that contemporaries foresaw some of the major consequences. In Voice Across the Sea, one catches something of the excited prophetic spirit that waited upon so many 19th century developments. By comparison we seem to have come to take everything for granted.

1. Consider how, just as the first decades of print were dominated by the image of the manuscript so the first years of radio and television were dominated by the patterns of the immediately preceding technology. The familiar type of this pattern is "the horseless carriage" and "wireless".

2. Consider how the 400 line image presented by the television monitor is a testimony to centuries of print culture. How necessary is this linear structure with its scanning finger moving from left to right to the existence of television?

3. The British still say wireless for radio. (See Voice Across the Sea and Broadcasting and Television Since 1900 for background material to explain this verbal habit.

4. The physicists of our time have often urged the need for a "Unified Field Theory" to provide a base for the inter-relationship of all knowledge. Why is such Field Theory an inevitable feature of modern physics?

Readings and Suggestions - Telegraph - 2

What problems result for other subjects like history and economics and language study from media patterns which involve the daily experience of the globe as a mosaic tribal drum or telegraph? Is it possible to maintain or practical unite our older divisions of knowledge and experience?

TELEGRAPH

In his radio days, Walter Winchell made valid and imaginative use of the telegraph medium. He combined the sound of the typewriter and the telegraph with the shrill urgency of his own voice as he said: "Mr. and Mrs. North America, let's go to press")

Because of the very intense nature of the High Definition (H-D) character of the telegraph, we would expect in advance the Low Definition (L-D) corner of our chart to be hard to fill in. One characteristic of the H-D corner of the chart of any medium is that it tends to be occupied by conscious individualist traits while the L-D corner tends to get filled in with unconscious collectivist traits. I had no such plan in mind to begin with, but was simply groping my way.

If private urgency and anxiety characterizes our ordinary [illegible] of the telegraph, it is equally certain that its over-all operation is to turn the world into a sort of tribal drum ever throbbing with low insistency. A similar L-D aspect of telegraph is its power to create an inclusive global image by means of the montage of newspaper items. The simultaneity of telegraph coverage translates various media into a single global snapshot. When ordinary time and space are eliminated by the instantaneous new time and new space, or space-time, they appear in such incongruous form as the global snapshot.

HD SC

Global stutter supplants semaphore telegraph...
Note of global urgency...

TELEGRAPH

N/N/N

Tribal [illegible] telegraph...
All-at-onceness [illegible]
Auditory global...[illegible]
global snapshot

SY ID

INTRODUCTION TO THE TELEPHONE

Mr. Clarke, in his Voice Across the Sea, p.18, reminds us that the word telephone came into existence before Alexander Graham Bell was born. "It was used by Professor Wheatstone as early as 1840 to describe a device he made for conveying musical notes short distances through wooden rods. By the 1870s, dozens of inventors all over the world were trying to achieve the electrical transmission of speech, and it was only a matter of time before someone succeeded. How close that is is proved by the fact that the American Patent Office received Elisha Grays' design for a telephone on the same day as Bell's but an hour or two later--to the subsequent great profit, needless to say, of the legal profession, which did very well out of the telephone.... Bell received the fame and his rivals are now only foot-notes in the history books. There are no second prizes in the race for any great invention or discovery".

PROJECTS AND QUESTIONS - TELEPHONE

1. How would a speed-up to telephone dimension of information movement affect the pattern of authority and of decision-making?

2. Ask your friends and parents how the telephone shapes their business and social lives.

3. What, for example, is the effect of the telephone in medical practice? In political life?

4. What has been the role of the telephone in the newspaper world?

5. Consider the way in which the telephone is used in broadway plays, or in Hollywood movies, as indicators of its real force and character.

6. What qualities of drama and action come to mind in relating the telephone to stage and movie and novel?

7. Is it natural that one medium should appropriate and exploit another?

8. Is the use of which one medium makes of another the clearest testimony to its nature?

9. Why is the telephone so irresistably intrusive?

10. Why do Europeans and especially English people particularly resent the telephone?

11. Why does an Englishman prefer to manage his appointments by telegraph and postcard rather than person-to-person telephone calls?

12. Why is it difficult to exercise delegated authority in a world supplied with telephones?

READINGS AND QUESTIONS - TELEPHONE

In his Voices Across the Sea, A. C. Clarke, having dealt with telegraph and trans-oceanic cable entitles chapter XIV "The Wires Begin to Speak". He says "The telephone was perhaps the last of the simple yet world-changing inventions that could be made by an amateur working with limited resources. It has been stated that had Bell understood anything about electricity, he would never have attempted to make such a ridiculous device, as any real expert would have known at once that it couldn't possibly work".

In the same connection Catherine MacKenzie in her Alexander Graham Bell, Houghton Mifflin Co., N.Y. (1928) writes on p.41 that it was partly a failure to read the German of Helmholtz that had induced him to suppose that Helmholtz had sent vowel sounds by telegraph. "But Bell was not to discover his error for two or three years. If vowel sounds could be sent by telegraphy he argued to himself on this premise, why not consonants? Why not speech?.... It was not until he secured a copy of the French edition of 'Sensations of Tone', before he left Great Britain in 1870, that Bell realized his mistake. He had been trying to repeat an effect which Helmholtz had himself not accomplished...'I thought that Helmholtz himself had done it,' Bell used to say and 'that my failure was due only to my ignorance of electricity. It was a very valuable blunder. It gave me confidence. If I had been able to read German in those days I might never have commenced my experiments'".

1. Is the all-at-onceness of telephone a big step towards automation and away from assembly-line sequential pattern?

TELEPHONE.....

Anyone who can remember the old trunk-line telephones knows how they were a means to community rather than privacy. The same instrument, when stepped up technologically, had opposite characteristics.

To-day, the older character of telephone as communal appears notably in radio programs that call private homes at random and put the private person into the public broadcast.

When two media are suddenly combined in this way, the resulting chemistry sometimes produces recurrence of primitive characteristics. The newspaper, hard pressed by television, may suddenly discover a new resource in an appeal to a more primitive medium of interchange. What great communities which can still maintain an interest in baseball are not unfamiliar with the use of newspaper advertising for swap-deals.

If the most individual and high definition of telephone is its urgent and intrusive power, the low definition collective aspect is its power to decentralize organizations.

In many ways the end of centralized hierarchical structures comes automatically with the telephone (See page 35 of <u>Landmarks of Tomorrow</u> by Peter Drucker). Here is a splendid example of the obsolescence or reverse characteristics of a medium as it is pushed very far in one direction.

The exclusive person to person character of telephone results in the end of the reign of personal authority.

Urgent...
Intrusive...
Exclusive - person to person
via auditory set-up...

Auditory in L-D

[illegible]
[illegible]
[illegible] delegated authority...
[illegible] centralization of
[illegible]...
Overriding delegated
authority...

INTRODUCTION TO THE PHONOGRAPH

The phonograph has been studied by Roland Gelatt in *The Fabulous Phonograph* (Lippincott 1955). Most instructive to the student of media is the series of misconceptions which surrounded the phonograph as much as radio. "Look, said Edison, it's like this. I start here with the intention of reaching here--in an experiment say, to increase the speed of the Atlantic cable; but when I have arrived part way in my straight line, I meet with a phenomenon and it leads me off in another direction and develops into a phonograph".

Edison once layed down a general rule for aspiring inventors: "When you are experimenting and you come across anything you don't understand, don't rest until you run it down; it may be the very thing you are looking for or it may be something far more important".

The technique of research that Edison here points to is the "mosaic" one described by Georg von Bekesy at the opening of his *Experiments in Hearing*. "The very thing you are looking for" is the natural way of referring to our standard method in research in which we try to get everything into a single consistent picture or perspective. The exploratory "mosaic" pattern of research is the one referred to by Edison when he says: "or it may be something far more important".

Edison had been looking for a means of speeding up telegraph transmission when he hit upon the phonograph in 1877.

Related to this episode is another major reversal familiar to the modern artist in symbolist form. "I refer to the fact that at many levels the artist to-day is aware of the consumer as the producer. As the electronic creates a total field situation, the audience is naturally involved more and more as producer and creator. The art forms which result from this new situation are increasingly do-it-yourself forms.

Edison's friend, E. H. Johnson, set out on a lecture tour in 1877 to expand on the marvels issuing from Edison's laboratory. "In the course of one of my lectures (in Buffalo) "it occurred to me that it would be a good idea to tell my audience about Edison's telephone repeater. My audience seemed to have a much clearer appreciation of the value of the invention than we had ourselves. They gave me such a cheer as I have seldom heard". (Gelatt p.20)

In the North American Review of June, 1878, Edison predicted ten ways in which his invention was to benefit mankind. Most of these ways depended upon the arrival of electronic tape to make them real. The first one "letter writing and all kinds of dictation without the aid of a stenographer" is a case in point. In fact it was the fate of the phonograph at first to be regarded as an adjunct of the business world and to be overlooked as a means of entertainment.

The novelty of the telephone increased this confusion. That two recent inventions should have quite different meanings was not obvious in 1878. Edison "could not or would not countenance the potentialities of the phonograph as a medium of entertainment.

He insisted that it was not a toy. He resented its use for amusement. And for years he deliberately discouraged the phonograph as a musical instrument". (Gelatt p.44)

These types of initial confusion are of the utmost value in providing clues to the grammars or structures and patterns of the situations which the new medium was about to transform.

It will be many years before analysts and historians, capable of using such clues, have taken up the job of popular cultural history. Even such a concept as "popular" or "entertainment" or "mass medium" provide valuable clues to the cultural assumptions of our own world--assumptions which are changing very rapidly indeed.

PROJECTS AND QUESTIONS - PHONOGRAPH

1. Why did the telegraph, the telephone and the phonograph become so tightly intertwined in their origin and development?

2. What do we learn about the contemporaries of Edison from his listing among the benefits of the phonograph (a) the teaching of elocution; (b) "clocks that should announce inarticulate speech, the time for going home, going to meals, etc"; (c) the "Family Record"--a registery of sayings, reminiscences, etc. by members of a family in their own voices, and of the last words of dying persons".

3. What has been the effect of the phonograph on the development of the orchestra?

4. Why should the early phase of the phonograph have created a hardening of the musical categories?

5. Why should LP have ended the brief reign of the limited orchestral repertoire?

6. Why should LP have made feasible the easy and inexpensive recording of the music vocal and instrumental of all cultures?

7. Is the LP development dependent upon tape recording?

READINGS AND SUGGESTIONS - PHONOGRAPH

The Fabulous Phonograph by Roland Gelatt, (Lippincott 1954)

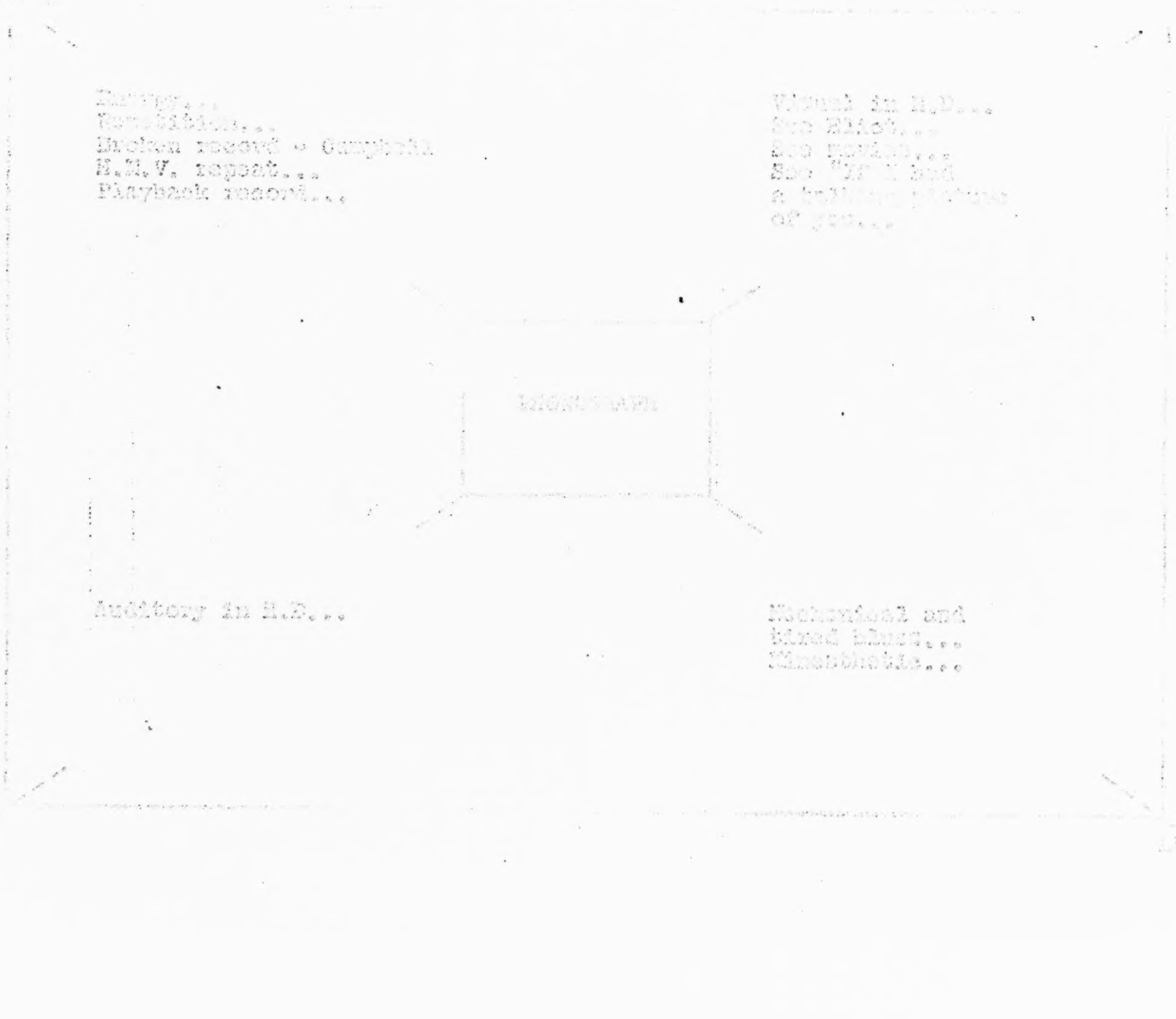
In connection with the confusions attending the development of the phonograph see The Wonderful Writing Machine by Bruce Blivins.

The originators of the typewriter were sure of only one thing. It could not have any commercial use. In the world of business, the personal touch of private calligraphy was indispensable. If the phonograph altered the repertoire of music and the character of orchestras and musical instrumental ensembles, consider also how printing affected the world of music, vocally and instrumentally.

Why should musicologists be so unwilling to consider technological effects upon various phases of the art of music? How does this same unwillingness to study the operation of technologies upon the arts and sciences concern us to-day in the world of teaching and educational adaptation to the new media?

PHONOGRAPH

The phonograph provides a major item of modern folk-lore. Like almost every other item of modern technology which has flavoured and shaped every aspect of our experience from childhood, it has received no attention from historians, psychologists or sociologists. The people who have studied it with minute attention are poets beginning with the symbolists who discovered in the various mechanical musical instruments of the past hundred years a new range of feelings and sensibility. Laforgue and Baudelaire are full of allusions to the mechanical and weary agitation of nerves brought on by barrel-organs and mechanical pianos. In "The Waste Land" of T. S. Eliot, the entire episode of the typist and the phonograph exists the [illegible] pattern for the student of media. [illegible] a great poet in interpreting the meaning of the major media of his time as they shape the lives of his people. It would not be hard to show how the phonograph, as a medium, has shaped the movie and the novel. The old song hit from "The Broadway Melody" entitled "If I had a talking picture of you" draws attention to certain basic relations between movie and phonograph which could easily be extended to the printed word as well. One medium always exploits another when possible. It seems to be a basic human impulse to translate one sense into another, and one medium into another.


Repetition...
Broken record - Campbell
H.M.V. repeat...
Playback record...
Visual in H.D...
See Eliot...
See movies...
Auditory in H.D...
Mechanical and
mixed blues...
Mnemotechnics...

INTRODUCTION TO MOVIES

The moving picture, which could not have been invented before photography, also depends a good deal upon the nature of printing. Only our Western culture in which four or five centuries of printing had obtained could have produced the motion picture. Because the printed word is in itself a sequence of black and white still shots of language in action.

The reader of the printed word is in large degree performing the role of the movie projector. By moving the still shots, or words at a reasonable pace, he creates the strong illusion of sharing the movements of another mind in action. As with movie, the book reader seems to enter into himself and to create a world of privacy and isolation.

To-day, it is a common observation that circular movement, or the principle of the wheel, which we in the West take so much for granted, is an abstraction from organic form. An animal, when running, rotates, as it were, and to have abstracted this rotary character from the organic situation gave man his major mechanical triumph. As with printing, the nature of the rotary movement of wheel is uniformity and repeatability. The movie depends upon these principles in every respect.

It is perhaps historically fitting that the first movie consisted of a sequence of a dozen or so cameras set up in a line to photograph the action of a running horse. There was a wager that at certain moments the horse ceased to be in contact with the ground. And so it proved..

The technique of film is to roll up the outside world on a

spool or reel in a sequence of still shots and then to unroll it backwards in order to reconstruct the illusion of a foreward movement.

As mentioned before, the printed book had done this for the movements of the human mind, since Gutenberg, with consequences which permeated all phases of Western life and technology. The sound movie necessarily followed the development of radio technology. Sound movie transformed the visual organization of the movie experience and seemed to discourage the Russians from further experiment with the movie form. They had brought the auditory dimension to the silent movie, as it were.

PROBLEMS AND QUESTIONS - MOVIE

1. In view of the various cultural backgrounds of England, France, America, Russia, India and Japan, what qualities would you expect to appear most in the movies made in these countries?

2. In his *Film as Art* Rudolph Arnheim for example says that the American film maker excels in the single shot. The Russian in montage. Why should this be?

3. Why should the European and the Russian and the Japanese have regarded the film as an art form from the first? Why should the English speaking world have such difficulty in seeing popular forms of entertainment as art forms whether the movie or the comic strip?

4. How did movies sell the American way of life to the backward countries of the Globe? Consider the role of uniformity and repeatability as indispensable to competition and rivalry. How could competition thrive where unique expression and achievement are stressed?

5. Was the picture story borrowed from the cartoon world?

6. Is there any hoop-up between magazine picture stories and silent movies? If so, is it in the isolation of one emotion at a time?

READINGS AND SUGGESTIONS - MOVIES

Film as Art, Rudolf Arnheim, University of California Press, (1957)

Film Form and The Film Sense, Sergei Eisenstein, Meridian Books (MG-10)

Film Technique and Film Acting, V. I. Pudovkin, Lear, N.Y. (1949)

The Liveliest Art, Arthur Knight, Mentor Books (MD 263) (1957)

1. Consider the tie-in between photography and the movie in the matter of narrative.

2. How do the current advertisements for Kodak movies the space and time meaning of the snapshot medium? Do they omit significant aspects of time and space as they relate to this medium?

FILM [illegible]

M. Arband, writing on film in Exhibition notices in the first place that in the 1920's film supplied himself with a sense of private identity and in the second place that American films provided the French at least with a physical sense of their own bodies. These two observations are complementary.

It has often been noticed, as a paradoxical feature of movies, that although they must be seen by a group in order to be enjoyed they have the effect of isolating the members of the audience and of driving each into his private world. (This is not the effect of watching television).

M. Arband's second point is equally valid, but much more novel. A High Definition (H-D) visual medium in the S-C (Subjective Completion) manner is strongly tactile. Such is the case with photography. A High Definition visual medium automatically challenges the perceiver to fill in the missing senses. A Low Definition (L-D) visual medium like television automatically challenges the perceiver to strengthen the weak impression offered to him. Film is not purely a visual medium, however. It is highly kinesthetic in its direct impression and since the advent of sound, the task of filling in has altered greatly.

Film makes us the camera eye, conferring upon us an omnivorous power to swallow the entire external world. It thereby makes us extremely agressive and extrovert. The jittery, segmental flicker (even though 22 frames a second) is probably as much the source of jazz jitters as anything else at all.

In film, then, the high definition effects tend toward group [illegible]. What about the low definition effects? We have pointed to the trend toward isolation of the individual in the audience, and the movie fan cult. Are these not closely tied to private fantasy and [illegible] experience?

That popular song of the 1930's "If I had a talking picture of you" will repay study in this connection.

HD

You are the camera...
World your oyster...
Extrovert jazz...

[illegible]

Audio.-Vis.-Kine in N.D.

Introversion...
Isolation...
Fantasy...
Control...

SI

INTRODUCTION TO RADIO

The British word wireless exhibits a kind of history of the radio instrument. Because, initially, radio was not thought of as a broadcasting form at all. It was thought of as an extension of the telegraph principle--strictly utilitarian in scope. In practice it was used for ship-to-ship and ship-to-shore communication. (See Dublin post office first broadcast 1916

Further obstacles to the use of radio as a broadcasting instrument were made by the big electric industries. It was, in fact, the amateur radio hams who broke through the big monopolies and who created a popular radio audience.

Since television, radio has acquired a new batch of characteristics. It has ceased to be a network operation. It has turned increasingly to individual needs and to new kind of programming. Characteristic of this is the substitution of several small sets for the single console model--specialized listening--specialized programming.

The car operator is catered for at various times of the day. There is the new type of coffee pot program for the housewife. There are hi-fi programs for the evening, and for the expert. Radio had, during some years, become a form for group listening. After television, it reverted to the more private, individual mode.

In Broadcasting and Television Since 1900 Maurice Gorham says: "Whilst wireless telephony was still being used only for point-to-point communication, there was just one example of the use of wireless telegraph for what must rank as the first genuine news broadcast, and this happened in Ireland during the Easter Rising of 1916. The Republicans had seized the General Post Office

and numerous other buildings in Dublin, and one of their first actions was to establish a wireless station and a military post to protect it. The station was at the corner of O'Connell Street and Lower Abbey Street, and the transmitter was a 1½ kilowatt ship's set taken from a disused school of wireless telegraphy. (According to "War by the Irish", by John McCann, the commander of the post, Captain Tom Weafer, was killed by a sniper's bullet during the first attempt to erect an aerial on the roof.) Knowing the British war-time censorship would clamp down on any news of the rising, the Republicans used the shipping wavelength to announce that the Irish Republic had been proclaimed in Dublin. The broadcast was in fact picked up by ships at sea and relayed to America, where the papers printed it. So far as I can trace, this was the first time wireless had been used not to reach a known receiving station nor to call help, but simply to convey news.

But this was still wireless telegraphy, sending its signals in Morse. True broadcasting, sending speech and music direct into people's homes, was still to come, and few people seem to have seen its possibilities lurking behind the new fact of wireless telephony. Some did. It was in 1916 that David Sarnoff in America advocated the idea of a broadcasting service under his own imaginative title of a Music Box in the home. Sarnoff was then on the commecial side of the American Marconi Company, and his memorandum to his Managing Director explaining his great idea bore no immediate fruit".

Introduction to Radio - 3

The obsession with the pattern of radio as linear and the recognition of its real decentralized character came with the activity of the radio ham.

"Broadcasting owed its inauguration not to Press, Parliament, public, or the wireless industry, but to the amateurs; that ridiculed minority of "hams" who spent all their leisure hours operating their home-made sets. They talked and listened to each other, played gramophone records to each other (all in the name of technical experiment), and when they could they listened to the concerts broadcast from the Hague and the Eiffel Tower. (They were not yet able to listen to America, where broadcasting was growing fast, though that was to come surprisingly soon.) The amateurs missed the broadcasts from Chelmsford and loudly demanded some other professional transmissions with which to compare their own results. There were not many of them--some 4,000 by the beginning of 1921, of whom only 150 had transmitting as well as receiving licences--but they were endlessly enthusiastic, and they were nearly all organised in one or other of the wireless societies. They gave the Post Office no peace. The Post Office offered them special transmissions of wireless telegraphy but they demanded telephony, in other words music and speech.

At the end of 1921 the Post Office received a petition from 63 societies representing 3,300 amateurs demanding wireless telephony transmissions, "primarily to serve the scientific purpose of improving the receiving arrangements", but the spokesmen of the societies referred also to weather reports, news, and music, which were already being received from foreign wireless stations,

in a way that showed clearly that what they wanted went beyond purely scientific bounds. This time the Post Office yielded and authorised the Marconi Company to broadcast speech and music for the amateurs, to the extent of one programme of fifteen minutes' duration each week".

This is an elementary paradigm of all artistic utterance and composition. As Robt. Louis Stevenson once said of the daily newspaper "I could make of that the greatest epic in the world if only I knew what to leave out."

To come to grips with the matter of dialogue somewhat more directly, it need be said that it depends upon an everyway simultaneous flow which is a very far cry indeed from the one direction, one level flow of the printed page, or of the lecture platform.

Electronic technology instructs the world again with simultaneous, every direction information flow. We cannot choose but live this way under electronic conditions. We can choose how to think but that again is very different from choosing program "content". To-day, we need to understand what Berenson meant when he said, in 1895: "The painter can accomplish his task only by giving tactile values to retinal impressions".

Berenson is pointing directly to the job of the painter as that of dialogue--the interplay and translation of the senses at a focal point of contemporary relevance. Mere flow of the most excellent impression does not confer relevance of function on any medium whatever. As dialogue comes back, relevance acquires primacy. Dialogue is the only means of achieving it at all, however briefly. Dialogue ends the regime of the consumer and the producer. In dialogue the consumer is a producer, and the producer a consumer.

With radio it is easy to notice one of the major features of electronic media, namely the powerful drive toward the extension of human dialogue into all levels of human affairs. The book had steadily undermined the nature and role of the dialogue in teaching as everywhere else. (See Walter Ong's Ramus, Method and the Decay of Dialogue - Harvard University Press, 1959).

The reason that radio fosters a return to dialogue is auditory. Actual speech, for example, is technologically a very poor medium. Speech fosters highest levels of awareness, precisely because it does such a poor job of communication. When a medium is doing a poor job, it commands the highest degree of participation between speaker and speaker, between speaker and audience. For that reason alone, it is possible to point out that television is kinder to dialogue than is radio, or is the film.

Radio and film are technically superior to television in terms of information flow achieved. In the same way, writing is superior to speech, and print to writing. But the interchange which in dialogue reaches a higher intensity as information is withheld.

PROBLEMS AND QUESTIONS - RADIO

1. What was the effect of the radio on movies? On newspapers? On magazines? On language? On the concept of time?

2. How do P.A. systems relate to radio?

3. Does the P.A. system affect the visual as well?

READINGS AND REFERENCES - RADIO

Broadcasting and Television since 1900, Maurice Gorham, Andrew Dakers Ltd., London (1952)

The Art of Radio, Donald McWhinnie, London (1959)

1. Is the disc-jockey a product of radio?
2. Consider the differences between a P.A. system and radio.

   Do they have similar characteristics when charted?
3. Would you say that as long as we are within hearing distance of radio the sound is inside your head?

What then is the High and Low Definition character of radio? The answer to this question already exists in the public image of this form.

I propose this as a basic principle of media research. Whatever the public will accept and verbally repeat about any medium, already possesses a valid base in human experience. Nobody can hire anybody to accept or repeat an attitude toward anything except in the world of advertising. That is why a popular phrase of wide acceptance is high-level psychological evidence of collective experience.

Let us take the 'radio ham' as the type of radio personality, and also by the popular phrase, that designates that personality. It was the 'radio ham' who forty years ago broke up the big commercial foundations in the radio field. (See Maurice Gorham, Broadcasting and Television Since 1900, London: Andrew Dakers Ltd. (1952))

The complex meanings and overtones in the word "ham" will serve as an example of what I referred to concerning popular phraseology for a basis of media research. The "ham" has very much of the private operator, very much a High Definition figure. What do we discover in the Low Definition corner of our chart? What are some of the group consequences of radio whenever it impinges on a community? Let us say, right off, that radio has a very different effect upon a highly literate community from its effect upon a newly literate society. The radio of the masses in a society that has been reading books for centuries is not the same as the radio

of the [illegible] that has been [illegible] and re-
[illegible] that [illegible] the
effect of [illegible]
very ancient [illegible] not probably [illegible] the
same as the effect of [illegible] upon a [illegible] linguis-
tic group.

The [illegible] effect of radio on a tribal [illegible] is to intensify whatever elements of tribalism are present. The reasons for this are simple and natural and [illegible] to mention. The tribal man lives in an auditory world. That does not mean that it is a world of many noises, but rather that the patterns of experience have a "field" character meaning that they are assembled from many directions at once. When Joyce calls his last book, Finnegans Wake, he means among other things that the [illegible] tribal structure of human social organization is about to return again. When man lives globally [illegible] on a planet that is no more than a village in [illegible], he cannot avoid the all-at-once-ness of pattern which is the auditory and tribal type of [illegible]. When radio [illegible] in Europe, it awakened the old tribal [illegible] and patterns of various European peoples giving us the form [illegible]. The effect of radio upon the [illegible] of completely detribalized [illegible] such as the British and [illegible] Americans, has been to [illegible] up a [illegible] of responsibility for [illegible] in the forms which we associate with [illegible] economics.

[illegible]

[illegible] have wide acceptance among the [illegible] has been expressed in many ways to [illegible] in our most civilized and [illegible] [illegible] naturally follows the family pattern of togetherness [illegible] Think of the [illegible] of Western man deploring [illegible] while he lends every energy and skill to promote it by the mass media.

INTRODUCTION TO TELEVISION

Maurice Gorham in his Broadcasting and Television Since 1900 points out how "the original Baird system was mechanical depending for its scanning process on a spinning disk; the EMI system was all electronic, using no moving parts". Does not this transition from the moving part to the moving of information represent the larger meaning of the electronic revolution itself? At the present moment, for example, is it not the sudden recognition that war now consists not of the moving of hardware, but of information which leaves the Western world floundering and unprepared? Economists have pointed out that as information levels rise in a culture or economy, not only does one product tend to be easily substitutable for another, but information itself tends to substitute for the previous movement of commodities. And since the movement of information constitutes by far the largest human activity to-day, war itself tends more and more to assume the informational character. The same factors of change of information pattern by means of new media, likewise constitute the emergence of new staples, and new natural resources in a society. Once again, the concept of wealth and resources and commodities as "contained" in the same situation continues to prevent us from seeing that these things are, in reality, constituted by new modes of human association.

One way of illustrating this is to point to our realization to-day that money is not a store of value, but a means of moving information. And credit cards then take on the character of money.

It was in 1936 that the BBC began regular television broadcasting only to close down in 1939 with the outbreak of war. The

British were able to pioneer television because of their large government set-up for broadcasting and their indifference to commercial sponsors. Nevertheless, as Maurice Gorham points out (p.234-5 <u>Broadcasting and Television Since 1900</u>):

"The path of the television pioneers was far harder than that of the radio pioneers of the nineteen-twenties. As has been mentioned before, transmitting television is a more complex and elaborate process than broadcasting sound, more expensive, more limited, and more apt to go wrong. In the same way, viewing is harder than listening. You cannot enjoy television whilst you are washing up, darning socks, doing homework, playing bridge, or driving a car. You have to stop doing anything else and watch the screen as well as listen to the loudspeaker. Nowadays there is no need to draw the curtains and put out the lights, but the set has to be where the whole family can see it, and this usually means arranging a room round it, and keeping the room solely for television when anybody wants to watch; this at a time when living-space generally is more limited than it has ever been.

Further, television reception is more difficult than reception of sound broadcasts. The most expensive set, the most elaborate aerial, will not always ensure against interference even when the set is quite close to the station. At different distances a hospital using diathermy treatment, a main road carrying a stream of motor traffic, an air-line overhead, may all interfere with the picture, and the eye is less tolerant of disturbance than the ear."

The effects of television on the American public (for 10 years) have not been observed simply because attention has been focused in the wrong area. This subject is considered in the section on the Media Charts, but as with any new medium the effect will naturally occur where there is most alteration of sensuous habit and attention and this, of course, has nothing to do with the program content of any medium.

The total contrast between the movie, and television images, closely corresponds to the huge discrepancy between the manuscript and the printed page. For those who ignore the constitution of the images, and who are convinced that the "content" of the images is the central matter it is only necessary to point out that they continue to identify themselves with that august company for whom in all ages the new horseless carriage cannot hide the noble figure of the horse.

The gegenschein of a departing technology never fails to colour our views of new technology. When this illusion reaches the intensity of suggesting that new technology should do the work of the old, a serious danger develops. For those who imagine that film and television can be integrated with existing curricula as incidental aid, it is necessary to point out the fatal past orientation of print culture.

It is precisely because print is a form of applied knowledge, the first mechanization of a handicraft, that it has both a profound pragmatic bias and a strong bent toward doing in a more efficient way what has already been done. Such a bias is not found for example in the Russian world, nor in many parts of Europe where print has only been an incidental and recent form of experience. Where print has not held sway, the human mind retains a resilience of structural design and innovation which is a major advantage when dealing with electronic media. The whole North American institution is in utmost danger from electronic media, both because

the habits we have acquired from dealing with print culture are in themselves limited, and [illegible], [illegible] because the challenge of the electronic media demands [illegible] spontaneity and resilience.

PROJECTS AND QUESTIONS - SCULPTURE

1. Engineers claim that a thousand line television image would provide almost as high definition as the present movie image. Supposing that an equally high definition of retinal impression were achieved for television, what would be the effect of its multi-point mosaic structure over and above the retinal impression?

2. Why should the broken line of the television mosaic emphasize the sculptural contours of objects?

3. Why has sculpture traditionally been spoken of as the voice of silence? Does this mean that the sculptural object exists on the frontier between sight and sound?

4. Is there any possible line of investigation suggested by the fact that sound waves become visible on the fuselage of jet planes just before they break the sound barrier? Does this suggest that the various human senses are translatable one into the other at various intensities?

5. If sculpture exists on the frontier between sight and sound, does this mean that beyond that frontier is writing and architecture and enclosed or pictorial space? In a word, must the nuclear age civilize those primitive cultures from which we emerged by means of writing and the visual organization of experience? Can this be done without mere elimination both of the primitive and of the civilized achievement?

6. Consider the power of any medium to impose its own spatial assumptions and structures. Extend your observations to discriminate and distinguish between the kinds of space evoked and constituted by the film on one hand, television on the other.

[illegible]

[illegible] (1955?), Medical College [illegible] Dakota [illegible]

In [illegible], (Jan. [illegible]), Vol. VII No. 1, "Televising [illegible] the Teaching of Operative Surgery", Dr. David S. Ruhe and Michael R. [illegible] their experience with motion picture utilization [illegible] films not of the guest surgeon's own production were used in emergencies and when patients proved unsuitable.

"Surgical films as teaching aids do not have the impact of television, nor do they create the feeling of intimacy between teacher and audience. At least one teacher has stated the importance of a personal approach in acceptance of the television medium. We would emphatically confirm this opinion".

1. In the same year, I heard Dr. Ruhe speaking at Omaha, Nebraska, to an NAEB Conference. One of his observations then was that on television the viewer in some mysterious way seemed to handle the scalpel and to do the operation. Would not this be directly related to the very strong tactile factor in the television image?

[illegible]

[illegible] recognized function of [illegible] charge which is in the [illegible] we shall have to pay [illegible] attention to [illegible] activity. The [illegible] of [illegible] a projector of images. The viewer of television [illegible] projector, but [illegible] anything [illegible] the screen. On the other hand what about Low Definition (L-D) [illegible] television? Does not the character of the viewer [illegible] the images [illegible] suggest that the viewer is [illegible] Is there anything about the [illegible] generation of the past ten years to suggest [illegible] of to-day?

The television image [illegible] Low Definition or quality. This automatically involves the television viewer in a good deal of [illegible] and in strengthening the feeble image.

Students of [illegible] painting are familiar [illegible] work of Seurat with the [illegible] which he achieved by means of light and shade [illegible] points somewhat like a wire-photo to-day. The [illegible] which constitute the monitor image have a similar [illegible] lending to the television image a strong [illegible] quality. Notice that this tactile quality is in the S-I (Structural Impact) and not the S-C (Subjective Completion) column of our chart.

Our aesthetic standards could not help being affected by so radically new a means [illegible] as exemplified by this new image. The more I examine the character of the television image, the harder it is for me to find anything in common between it and the moving picture.

You are the screen...
You are the scalpel...
Do-it-yourself...
Ambivalent...
Sculptural...

TELEVISION

Visual-time, in 3-D...

Involvement...
Cool...
Profound...
Impersonal...
Acoustic [illegible]
via sculptural [illegible]...

The [illegible] in the concurrent testing of the units was made possible by the following people:

A. Roy Low, Department of Physics

Carl Williams, Department of Psychology

Isabel Ilobeth, School of Radio & Television

James Peters, Department of English

Gerald [illegible], Department of Radio

William Sekins, Department of Radio

Geoffrey Sandison, Department of Television

[illegible]

Embedded in the present report is the account of a multi-media experiment which a year ago was carried out [illegible]. It was in two phases. The first phase was a comparison of four media, followed by a comprehension test. The second phase involved the same media in "high definition" or "intensified" form. The first phase, when published, got considerable attention. The result was "scientific" and unexpected. Using all the approved methods of psychological testing we had expected to obtain no significant result whatever. But the result had been notably significant.

Repetition of our experiment by others confirmed our results. Since in the first phase the use of the various media had been minimal or in low definition, it seemed worthwhile to repeat the experiment using the same lecture materials and the same questions with carefully randomized groups. The results, not understood at the time, was quite surprising.

Television which had priority in the first phase dropped below radio in the second phase. The other media retained their positions. This second phase closely concerns the current report on understanding media. Television, I show is a low definition medium, and radio is a high definition medium. That is to say, the quality of sense image offered by television is visually of poor quality and in the case of radio the quality of auditory image is very high. When a low definition medium like television is augmented by studio gimmicks, its teaching impact is strikingly reduced. But when a high definition image like radio is similarly augmented, its teaching impact is increased.

To give [illegible]

justified the [illegible]

each other, and the [illegible]

become possible to a [illegible] exceed

[illegible]

Introduction

A teacher in [illegible] has [illegible] to concern itself with [illegible] regarded that the [illegible] in a very real sense [illegible], the responsibility for the [illegible] and presentation of results fall to the [illegible] the teacher to being most familiar with the [illegible].

Mass research on mass media has [illegible] either of two objectives: studies of the influence of [illegible] on attitude changes, and [illegible] designed [illegible] to help sell soap or [illegible] on the degree to which [illegible] media facilitate [illegible] learning, if indeed they have any influence at all. The question does not occur readily because the mass media themselves are seldom seen as educational [illegible]. The silent assumption that mass media exist primarily for entertainment and propaganda, which underlies most such research, automatically excludes research with an educational bias.

Problem

In its most general form, the problem investigated can be stated thus: Is learning affected by the channel over which information comes? If so, how and to what extent? [illegible] usually assume that television, for instance, is more compelling than radio in securing our attention, we also [illegible] that we can easily compensate psychologically for this differential advantage. Whenever our attention is really aroused, we can and do attend to the radio [illegible] report with the firm conviction that we [illegible] end up with all the information we require. An extra [illegible] of attention, we assume, will easily make up for the fact that we could have gleaned the same information with less effort over television.

With these considerations in mind, the experiment was designed to provide the [illegible] information in [illegible] identical wording, to four similar [illegible], each of which had the "same" motivation to seek out and remember the information presented. Given the same objective examination on that information, would the only systematic difference remaining, namely the different media used, make a statistically significant difference to the average scores of these [illegible]? Television and radio were obvious choices for an experiment on mass communication. Since they are often contrasted [illegible] "live" situation, a "live" lecture audience was added. The fourth medium chosen was the printed page since it is [illegible] regarded as the [illegible] carrier of Culture—with a capital C—, and is most often thought of as being threatened by the newer media in terms of its continued existence.

Design:

Both the magnitude of [illegible] all that [illegible] that the formal [illegible] distortion over each of the [illegible] in such a way [illegible] forwarded [illegible]. The method employed was [illegible] the lecture [illegible] on the [illegible]. The [illegible] that had [illegible] ted by the [illegible] gation. That is, [illegible] in its own way, [illegible] process of the audience?

The subjects were [illegible] students in [illegible] in Arts at the University of Toronto. All of them were studying anthropology as [illegible] completing their year's work. The lecture topic ('Thinking through Language') was unfamiliar to them, and from their point of view, both difficult and stimulating. The class list was arranged in descending order of academic grade, based on first year results, and then arbitrarily divided into four groups or audiences on a stratified sampling basis, such that each audience contained an equal number of high, average and low students. For this purpose, 'high' meant grades of A and B+; 'average' meant grades of B and B-; 'low' meant grades of C and below. After the four audiences had been selected in this way, another person arbitrarily assigned each audience to a medium. These were announced to the students on arrival at the CBC studios. Each group went to a separate room in the CBC building where they were supervised by members of the seminar. The lecture was delivered before the studio audience and simultaneously relayed to the television audience and the radio audience. At the same time, mimeographed copies of the lecture were distributed to the reading group, who read at their own speed and for the same length of time as it took to deliver the lecture. Immediately thereafter, each group wrote a thirty minute examination on the lecture. This consisted of nineteen multiple-choice questions (four alternatives each), plus one broad essay type question to be answered in 200-300 words. Most students finished before the nominal time limit. The test should therefore be regarded as a 'power' rather than a 'speed' test. The papers were graded by the anthropology section of the seminar and turned over to the psychology section for analysis.

Here is a section from the lecture and its covering question:

I recall one experience I had several years ago while living with the Eskimos. I was riding along on a dog sled one bitterly cold day--the wind hit me in the back and seemed to come out the other side--when I turned to a hunter with me and said, as best I could in Eskimo, 'The wind is cold.' He roared with

laughter. [illegible] of something important.

When we say, 'The lightning flashed' we:

a [illegible]
b use an [illegible] term
c describe the [illegible] of being without action
d describe the [illegible] in the only possible way

The above question called for an understanding of the [illegible] lecture: 'The lecturer [illegible] the subject philosophically' [illegible] at the same time said that the subject, for example, [illegible] philosophers. How would you interpret these two statements in terms of the lecture?'

Controls

It is a [illegible] that [illegible] the 19th century [illegible] sought to learn the [illegible] of [illegible]. The 20th century [illegible] is more [illegible] are achieved. For this [illegible] of the controls used in this study [illegible] an essential part of this report.

The term 'control' [illegible] of our [illegible] those [illegible] which [illegible] other than the four [illegible] to bias the results.

It does not mean that [illegible] totalitarian, that social scientists [illegible] norms understanding and [illegible] control, that our subjects were [illegible] without their consent, that we laboured [illegible] illusion of playing God with other people's lives, that [illegible] to [illegible] bully, delude, hoax or [illegible] an innocent group of students.

[illegible]

The subjects were [illegible] to be as homogeneous as possible, i.e., [illegible] course subject matter. [illegible] was controlled by the method of [illegible] sampling [illegible]. It is not a fair assumption that good students in general learn more than poor ones, even in lecture.

Motivation was controlled by an arrangement [illegible] the class instructors [illegible] examination [illegible] students [illegible]. In order to [illegible], the investigator [illegible] grade. [illegible] In addition, [illegible] each group [illegible] the experiment [illegible].

No attempt was made to equate groups for sex, socio-economic status, familiarity with television, radio, etc.; these were assumed to be roughly equivalent (i.e., equated) by random assignment to each group.

The examination was [illegible] by the use of the objective, multiple-choice type of question, which permits of easy quantification. The tests on this lecture [illegible] the Appendix. It should be noted that [illegible] question contained a [illegible] among the four alternatives presented, [illegible] in a measure of [illegible], not recall.

No note-taking was allowed during the lecture, in an attempt to simulate normal conditions of television and radio listening. Whereas the lecturer necessarily "faced" the studio, television and radio audiences, thereby [illegible] a certain degree of control on them, it was not possible to duplicate this [illegible] for the reading audience. In this sense, this group was not as well controlled as the others.

Results:

The results given here are confined to an analysis of the multiple-choice section of the examination. The statistics used were the analysis of variance and the 't' test of significance of difference between means, [illegible].

The analysis of variance showed that there is, in general, quite a significant difference in the amount learned as measured by the multiple-choice test. It also showed, quite naturally, that academic ability makes a significant difference in the amount learned. [illegible] was significant, [illegible] it was found possible to test the medians [illegible] the significance of differences in order to sort them in effectiveness. This analysis showed that the television average was superior to the radio average—significant at the 1% level of confidence (i.e., there are 99 chances in 100 that this is a true difference). It also showed radio to be significantly above both the reading and studio performance—significant at the 5% level of confidence (i.e., there are 95 chances in 100 that this is a true difference).

The graph shows the comparative results by medium and by academic ability, shown here at three levels. This display is more revealing than the averages for each medium, since it shows how the media affect each level of academic ability. The [illegible] television, radio, and reading comparisons, since it can be seen that the media [illegible] their effects at all three academic levels. Note for example that the low students on television do exactly as well as the middle students on radio, a clear measure of medium effect. Note too, that the greatest single discrepancy on the graph occurs between the good students on television and radio. Apparently television has its greatest effect on the best students!

The studio results are puzzling. The 'Low' and 'High' reflect presumably the disturbance and excitement of the studio itself, but if they do, [illegible] to the point that they did as well as the television middle group? Originally the studio group was regarded as the equivalent of a lecture audience. [illegible] the television studio [illegible], before the statistical analysis, [illegible] group. We retained it in the study but with the [illegible] 'studio' group.

The table beneath the graph [illegible] shows the number of cases (n), and the averages for each medium together with the confidence level at which the differences can be accepted as significant.

Conclusions and Comments

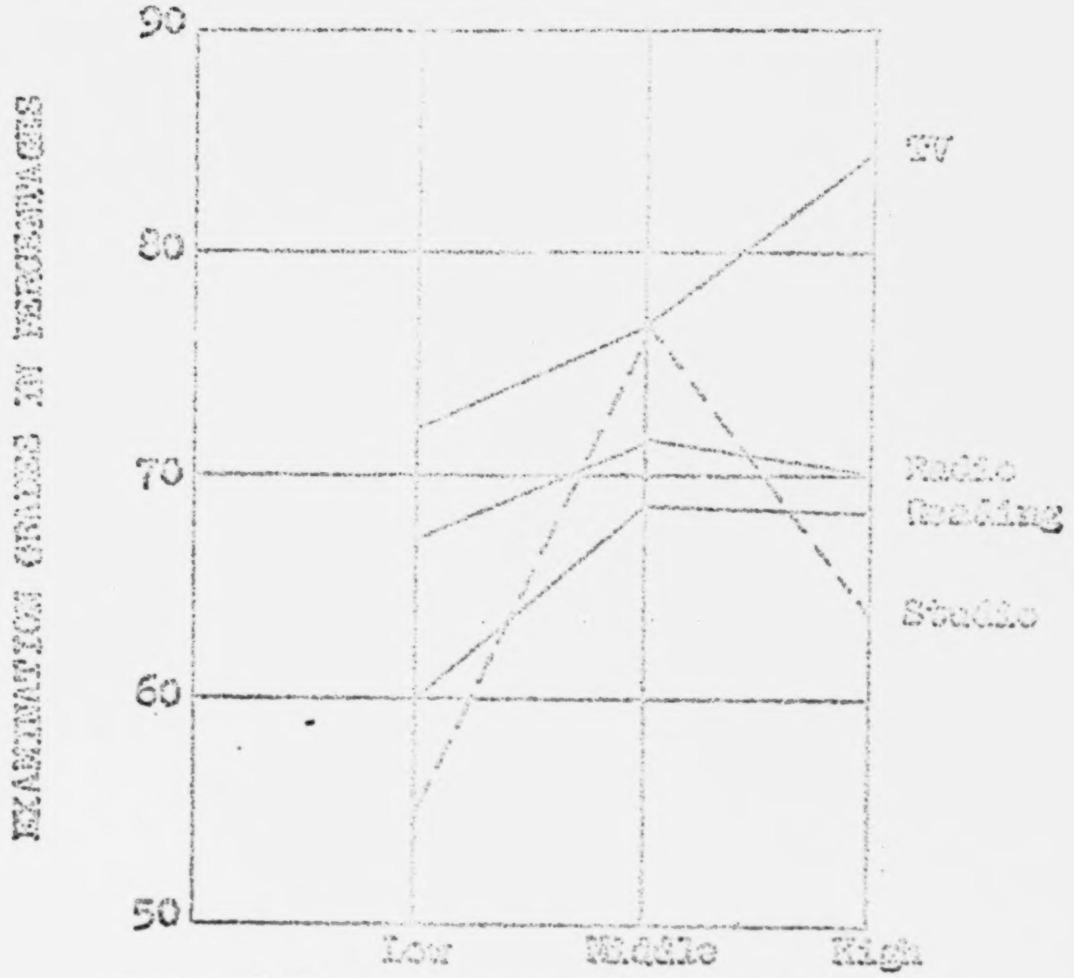
One experiment does not establish a generalization, but it is plain that under these conditions at least, certain of the mass media, and notably television, are very effective channels for conveying information. The astonishing feature of the study is the relatively poor performance of the reading group. Many members of the seminar predicted it to be the best of the four! One feature involved in these standings became clear from an examination of the results of a single question. In one portion of the talk the lecturer stressed gestures and delivery to accent his words; the question covering this passage was accurately answered by most of the television audience, half the radio audience and few of the reading audience.

It is then fair to conclude that media do make a difference in immediate recognition, using undergraduates as subjects. It is also fair to rank the media from television through radio to reading in terms of their effectiveness _under these conditions_. No conclusion is drawn on the studio group.

At this stage of research, generalization is dangerous. The study does not prove that television is 'better' than radio or that either is preferable to books, or that 'live' audiences learn little. Would one get similar results with housewives, with engineers or even with these same students presented with a totally unfamiliar topic, say, the devolution of estates in Athenian law? Would persons of average or below average intelligence react in the same way? Would children? These and a host of similar questions suggest that at least an interesting and important area of research has been tapped by this exploration.

1. Actually the number was larger, but to make the groups as equal as possible and to make the classification on previous academic standing clear, the final number was reduced to 108.

2. Statistically speaking, a difference between two averages is called significant if it could not have occurred by chance more often than 5 times in 100 occurrences. Therefore, the betting in this study is that we have 95 chances in 100 of being sure that the differences obtained are 'real' differences and not due to chance. In some cases we have 99 chances in 100 of being right.



N = 108 (27 subjects in each audience)
each 'x' represents the average of 9 subjects

ACADEMIC LEVELS OF STUDENTS

Audience	N	Mean	Difference significant at
TV	27	77.2%	
RADIO	27	69.2%	1% level
READING	27	65.1%	5% level
STUDIO	27	64.9%	not sigfct.

Table showing average scores by media

MASS MEDIA AND RETENTION

We have now described in detail the experiment conducted by a Communications Seminar at the University of Toronto in February, 1954, to test learning via various media. The experiment has since been summarized in a number of journals, but unfortunately this interest has not always been accompanied by understanding.

In October, 1954, the original test was re-administered to the 74 students available of the 106 who took part in the first experiment. They were unaware beforehand that a re-examination was intended.

The multiple choice questionnaire used had 19 items, each with four alternative answers. It could be expected that a group knowing nothing of the subject would get 25% of the answers correct by guessing. Our subjects, however, were University Arts students who had taken courses in the social sciences and who could be assumed to do better than chance, even if they had neither seen nor heard the lecture. To check this, a control group was used: the questionnaire was given to 15 Second Year Honour psychology students, selected because, though their general training in social sciences was similar to the experimental group's the lecture was unknown to them and they had received no instruction from the lecturer.

During the eight-month interval some students had heard the lecture a second time when its kinescope was shown on television to the general public and some may have discussed it with friends. It is assumed here, however, that such reinforcement was random. To determine whether or not the 74 students re-examined were representative of the original 106, we compared the performance means of the two groups (Figure 1). Although in each case the re-test means were slightly lower, these differences were fairly uniform, not great, and therefore, not fatal.

It was anticipated that on the average the re-examination marks would be significantly lower than the ones obtained on the first test. It was further assumed that if the media did not continue to influence the retention of learning over time, there would be no 'real' differences on the re-test among the four groups who received this lecture through different media. If significant differences were found on re-examination among the groups, this could be fairly attributed to differential effects of the media through which the information was originally obtained. The results of the two tests for the 74 students are shown in Figure 1, broken down into the four groups, each of which was exposed to one medium. For comparison, the mean percentages of the original four groups are also given.

Two questions were considered: Were the media differences demonstrated by the first experiment still measurable after eight months? Did the media have a differential effect on forgetting during this period?

An affirmative answer to the first question was obtained by an analysis of variance of the means of the groups on the second test. It was found that there were still significant differences (i.e., could have occurred by chance only once in 100 times) between them. Unfortunately, it was not possible to analyze these results in more detail since there were unequal losses in subjects in the four groups, so that further comparisons were not statistically justifiable. The answer to the first question is, however, clear: after eight months significant differences exist between the groups exposed to the different media. The results showed there had been one change in the order of ranking the four media: the studio group moved from last to second place. The results from this group were regarded with doubt in the original experiment and were not included in the conclusions; no interpretation is now made of this change in rank.

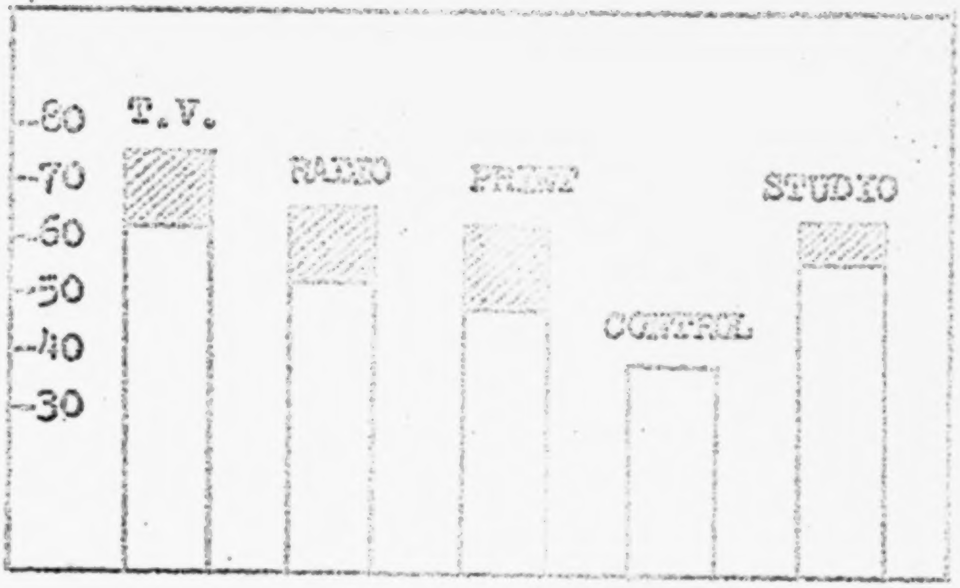
In order to answer the second question, it is necessary to compare the differences between the first and second tests for each group. The losses when tested by analysis of variance could not be considered to differ significantly from each other. This implies that the amount retained after a period of time is proportional to the amount originally learned. In other words, the rate of forgetting information is independent of the medium by means of which it was acquired. This was graphically demonstrated, in that the original ranking of media in order of effectiveness--television, radio, print--held after eight months.

Since it was found that for every group the mean percentage for the second test was significantly lower than for the first test, a third question was asked. If, after eight months, the students have in general lower scores, how much better than intelligent guessing are their second test results? This is answered in Figure 1 in a comparison of their results with those of the control group of psychology students. Their scores are better than random guessing, but significantly lower than the lowest of the four media groups.

In this particular experiment media made a difference in learning, not only in immediate recall, but after eight months. The original order of effectiveness--television, radio, print--held after this interval. In this experiment, different media influenced retention by influencing the amount of original learning.

The qualifications given in MASS MEDIA AND LEARNING--AN EXPERIMENT about misinterpretations of the original findings apply to these later findings as well.

	RETEST GROUP First Test %	Second Test %		ORIGINAL GROUP Test % First	
Television	75.4	61.5	14	77.2	27
Radio	65.5	52.5	21	69.2	27
Studio	62.9	56.6	21	64.9	27
Reading	63.9	47.5	18	65.1	27
			74		108



In this repeat performance, pains were taken to allow each medium full play of its possibilities with reference to the subjects, just as in the earlier experiment each medium was neutralized as much as possible. Only the mimeograph form remained the same in each experiment. Here we added a printed form in which an imaginative typographical layout was followed. The lecturer used the blackboard and permitted discussion. Radio and TV employed dramatization, sound effects and graphics. In the examination, radio easily topped TV (see Chart 2). Yet, as in the first experiment, both radio and TV manifested a decisive advantage over the lecture and written forms. As a conveyor both of ideas and information, TV was, in this second experiment, apparently enfeebled by the deployment of its dramatic resources, whereas radio benefited from such lavishness. 'Technology is explicitness', writes Lyman Bryson. Are both radio and TV more explicit than writing or lecture? Would a greater explicitness, if inherent in these media, account for the ease with which they top other modes of performance?

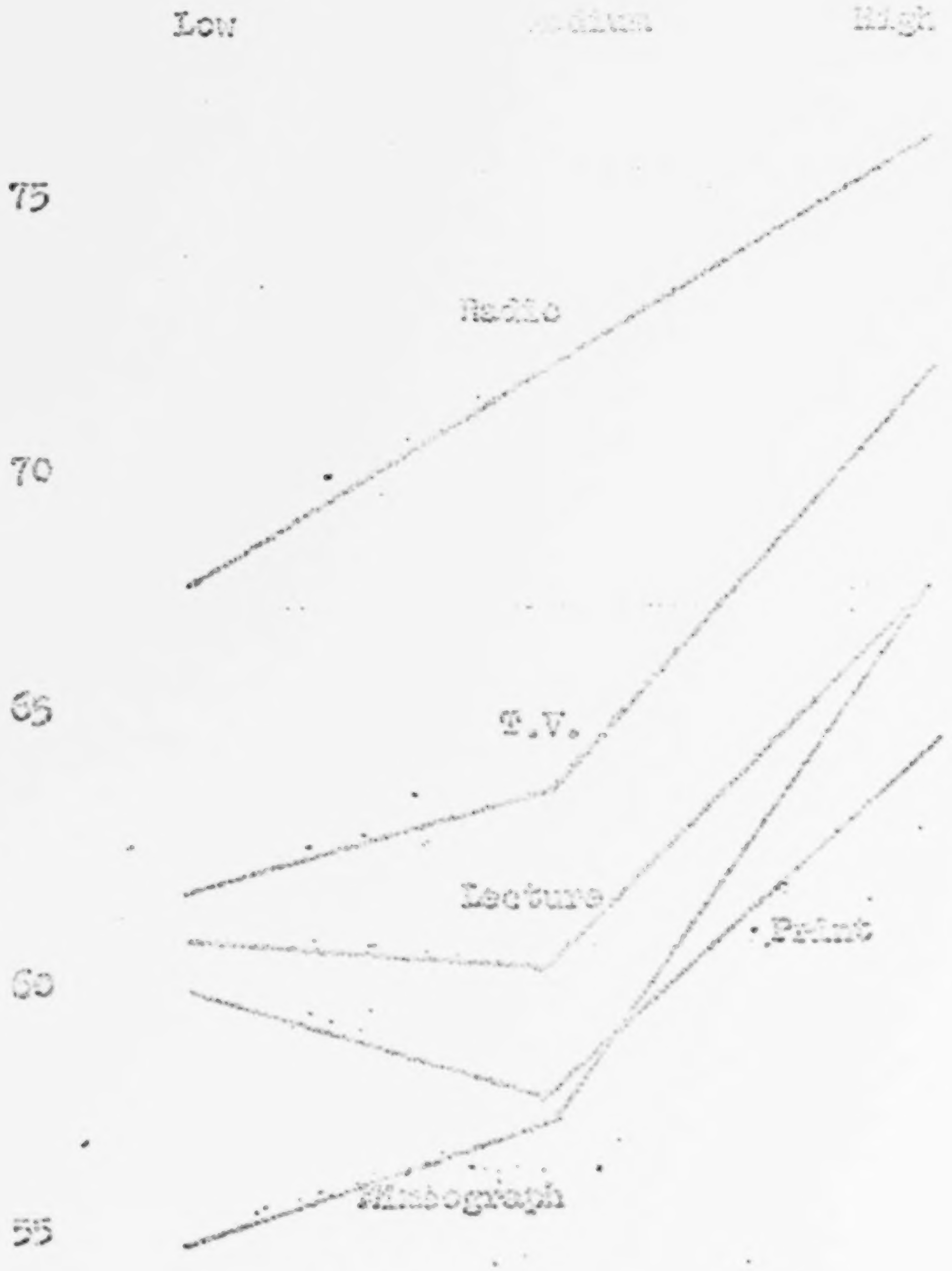
Announcement of the results of the first experiment evoked considerable interest. Advertising agencies circulated the results with the comment that here, at last, was scientific proof of the superiority of TV. This was unfortunate and missed the main point, for the results didn't indicate the superiority of one medium over others. They merely directed attention toward differences between them, differences so great as to be of kind rather than degree. Some CBC officials were furious, not because TV won, but because print lost. Scratch most and you find Student Christian-types who understand little of literature and contribute less, but, like publishers, have a vested interest in book culture. At heart they hate radio and TV, which they employ merely to disseminate the values of book culture. They feel they should dedicate themselves to serious culture. This is why they can't use radio and TV with conviction and are afraid to use it comically, and so they end up with wishy-washy. They are like 16th century scholars who saw the book revolution as simply a means of propagating old ideas and failed to realize it was a monumental change in sensibility, in thinking and feeling.

Official culture still strives to force the new languages to do the work of the old. But the horseless carriage didn't do the work of the horse; it abolished the horse and did what the horse could never do. Horses are fine. So are books.

Nobody yet knows the languages inherent in the new technological culture; we are all deaf-blind mutes in terms of the new situation. Our most impressive words and thoughts betray us by referring to the previously existent, not to the present.

The problem has been falsely seen as democracy vs. the mass media. But the mass media are democracy. The book itself was the first mechanical mass medium. What is really being asked, of course, is: can books' monopoly of knowledge survive the challenge of the new languages? The answer is, no. What should be asked is: What can print do better than any other medium and is that worth doing?

RESULTS OF [illegible] MEDIA TEST



[illegible]

I recall one experience I had several years ago while living with the Eskimos. I was riding along on a dog sled one bitterly cold day--the wind hit me in the back and seemed to come out the other side--when I turned to a hunter with me and said, as best I could in Eskimo, 'The wind is cold.' He roared with laughter. 'How,' he said, 'can the wind be cold? You're cold, you're unhappy, but the wind isn't cold or unhappy!'

Now this involves more than just another way of speaking, it involves another way of seeing things. Consider how different human actions must appear when seen through the filter of the Eskimo language where, owing to the lack of transitive or action verbs, it is likely to be perceived as a sort of happening without an active element in it. In Eskimo one cannot say: 'I kill him or I shoot the arrow,' but only 'He dies to me,' 'The arrow is flying away from me,' just as 'I hear' is 'me-sound-is'. Similarly, where we say, 'The lightning flashed,' as if the lightning did something, as if it involved something more than just being lightning, the Eskimo merely says 'flash'. Eskimo philosophers, if there were any, would be likely to say that what we call action is really a pattern of succeeding impressions. Such differences between languages--I don't mean Indo-European ones like French and German but native ones--are really tremendous. Some languages lack tenses. Of course, I really shouldn't say 'lack' because this implies a deficiency, and there's nothing deficient about these languages. In fact some can express ideas that English cannot.

Take metaphors: in English when we want to express an emotional or philosophical experience, we have no choice but to use words which refer to real objects or real actions. For example, I might say: I grasp the thread of your argument, but if its level is over my head my imagination may wander. How can my imagination wander? Most native languages, on the other hand, distinguish between inner psychological experiences and those that belong to the world of matter.

Let's take the language of the Trobrianders, a group of Pacific Islanders who live not far from New Guinea. Two famous anthropologists, Bronislaw Malinowski and Dorothy Lee, studied these people, and we probably know more about them than any other native group.

Now the Trobrianders are concerned with being, and only with being (nature, essence, existence). Change and becoming are foreign to their thinking. An object or event is grasped and evaluated in terms of itself alone, that is, irrespective of other beings.

The Trobriander usually refers to it by a word and one word only. To describe it would be redundant. To define an object in terms of what it is like or what it is unlike or what it can do. The Trobriander is interested only in what it is. To Trobriander each object is usually grasped timelessly. We would describe it in terms of past, present, future, but, for the Trobriander, these distinctions are non-existent. A word for an object implies the existence of all the qualities it incorporates. If I were to go with a Trobriander to a garden where the taytu (a type of yam) had just been harvested, I would come back and tell you: 'There are good taytu there, just the right degree of ripeness, large and perfectly shaped; not a blight to be seen, not one rotten spot; nicely rounded at the tips, with no spiky points; all first-run harvestings, no second gleanings.' The Trobriander would come back and say TAYTU, and he would have said all that I said and more. Even the phrase 'there are taytu' would be repetitious, since existence is implied in being.

And all the attributes, even if he could find words for them in his own language, would have been repetitious since the concept of taytu contains them all. In fact, if one of these were absent, the object would not have been a taytu. If it is unripe, Bwanawa. If overripe, spent, it is not a spent taytu, but a yowana. If blighted, nukunokuna. If it has a rotten patch, taboula. If misshapen, usasu. If perfect in shape, but small, yagogu. If tuber, whatever shape or condition, is a post-harvest gleaning, ulumadala. When the spent tuber, the yowana, sends its shoots underground, as we would put it, it is not a yowana with shoots, but a silisata. When new tubers have formed on these shoots, it is not a silisata, but gadena. In short, an object is; it cannot change an attribute and retain its identity. As soon as it changes, it ceases to be itself. As being is identical with the object, there is no verb to be. As being is changeless, there is no verb to become. Becoming involves time, but being to a Trobriander has no reference to time.

With us, however, time is all important. We cannot respond with approval or disapproval unless we know that a thing is getting bigger and better. If I am told that John Smith earns $4000 I cannot respond to this adequately unless I compare it with another salary. But if I am told that John Smith has been promoted to $4000 I will say 'good,' or if I hear that he has been demoted to $4000 I will say 'pity.' But simply John Smith at $4000 is something I cannot respond to. Our language is full of terms like demote and promote where value is attached to change.

Our language [illegible] express [illegible] views in terms of [illegible] language [illegible], has no tenses. [illegible] as a whole, not [illegible]. This [illegible] difficult for [illegible] being in [illegible] love.' When you're in [illegible] can have large feet, a small mouth, [illegible] in the [illegible] tiary, but you love [illegible] in our society [illegible] this way. [illegible] in before they can [illegible] case when I say [illegible] the more than the [illegible] being itself [illegible] to for us. Several [illegible] held in his arms our [illegible] ago [illegible]. 'Can he talk?' he asked. [illegible] 'Can he walk?' 'No,' I [illegible]. He was a philosopher, you understand. He just stood there, holding a mass of proto- plasm, not knowing what to say. He would say 'How bright' or 'How clever'. The Trobriander would say 'How baby'. and he would respond [illegible] in a situation where we cannot.

In our society, the tendency both in love and friend- ship, is to be attracted by qualities rather than persons. We like people not for what they are in themselves, but because they are beautiful or rich or amusing. So if they lose their looks or their money or their wit, we lose our interest. But for the Trobriander, being is evaluated in terms of itself alone, not in comparison with other things. Again, this is foreign to our thinking, except perhaps in the sphere of art, and even here, we are entering a 'twilight of the absolute.' [illegible] we can respond to a work of art only if we know [illegible] it is worth, or who painted it; we are incapable of judging it for itself alone.

Generally for us, to be good, being has to be as good as, or preferably better than, something else. Our language makes it easy to compare beings at every turn. Our vocabulary provides us with a large number of compara- tives. The Trobriander has no such means. Where we use similes, where we say I am your SUPERIOR, where we stress self-improvement and competition they employ metaphors. The Trobriander says young man [illegible]. The Trobriander emphasizes the status quo and co-operation. Phrases which we commonly hear--'My toy is bigger than Johnnie's'--'Mary dress is prettier than Mabel's'--have no equivalent in Trobriand. To be, an object must be true to itself, not in terms of its relationship to other beings. To be good, it must be the same always. In Trobriand, nothing--not even the world--

ever came into existence; it has always been, exactly as now. Their mythology contains no concept of creation from nothingness. No figure being ever noted as creator, artificer or transformer. The Trobrianders don't find themselves in the awkward position of trying to answer that unanswerable question: 'Who created the creator?'

The Trobriander simply isn't interested in chronological sequence. For example, he gives his autobiography in complete disregard for chronology, an effect achieved only deliberately by our sophisticated writers. He begins with the crisis, so to speak, and weaves backwards and forwards in time with many inclusions and repetitions, in the tacit assumption that your mind is moving in the same groove as his, and that no explanation is needed.

But for us chronological sequence is of vital importance, largely because we are interested not so much in the event itself, but rather in its place within a related series of events. To the Trobriander, events do not fall of themselves into a pattern of cause and effect as they do for us. We in our culture automatically see and seek relationships, not essence. We express relationship mainly in terms of cause or purpose. The maddeningly persistent question of our young children is WHY, because this is the question implicit in most of our ordinary statements and behavior. Every aspect of our lives teaches us to ask WHY, WHY, to seek causes. The Trobriander parent, however, does not entirely escape this questioning, for their children ask WHAT. I might add, our children do too, up until the age of about two or two and a half; then, when they are unconsciously beginning to learn the implicit philosophy in English grammar, then they ask why, why?

Yet the Trobriander has no term for why, nor for because, so as to, cause, reason, effect, purpose, to this end, so that. Malinowski's frequent why evoked from the Trobrianders either confused or self-contradictory answers, or the usual 'It was ordained of old.' Just as the conservative Torontonian says, 'This is the way we do it here.' I might add that the Eskimos always reply to questions of this type, 'Happy people don't ask questions.'

Now being the value only in a specific setting. Let me illustrate: The early pearl traders offered the natives money and trade goods as an inducement to get them to dive for pearls. But the natives refused, having no use for money and little interest in foreign trinkets. The traders noticed, however, that the Trobrianders set great store by certain large stone blades. First they imitated them carelessly, but the natives didn't want them. Next they had them made of slate in Europe and shipped halfway around the world. But the natives didn't want them. Finally they

had the native stone quarried and sent to Parisian craftsmen but these beautiful blades were also rejected. And indeed, why would the natives want them? For the blades had meaning only within a traditional activity. Let me give an analogy. Let's say you're walking down a street in Toronto, you glance in a window and see a girl who has just received a Valentine. She's excited and so is the family. There's hope! Obviously, to her, that Valentine is the most valuable thing in the world. You ring the door bell and offer her a job. When she asks the salary you say, 'One Valentine a week.' It's a ridiculous situation, of course, because the value of the Valentine lies in the fact it's February 14, she's young and in love. In any other setting but its own the Valentine is worthless and so is the Trobriander's stone blade.

Now the Trobrianders are not blind to causality; they are quite capable of perceiving events in a lineal pattern. But when a pattern assumes lineality, it is utterly despicable. For example, dating a girl includes giving her a gift. But if a boy gives a girl a gift so as to win her favour, he is despised. Or if she accepts him as a sweetheart just to obtain the gift, not because she loves him, she is regarded as being callous. Similarly, in activity in which the men exchange necklaces and armbands with one another, some men are accused of giving gifts as an inducement to their partner to give them in turn an especially good gift. Such men are labeled with a vile phrase; he barters. For the receipt of a gift should not cause the Trobriander to do something to give a gift in return; it is understood that he was going to do it anyway. In other words, the Trobriander can experience events lineally even causally, but when he does, value is either absent or destroyed. In a sense, the gift exchange is not unlike our Christmas giving. I recall that at Christmas time my mother always kept in an upstairs room several presents—the kind suitable for any age, any sex—wrapped, but unlabelled, just in case someone she had forgotten brought her a present. She would then thank them, say 'Just a minute while I run up and get your present,' hurry upstairs, quickly label the present, and then present it. For Christmas presents and cards are spoiled, in a way, if we think the other person has forgotten us or perhaps didn't plan to give us anything until forced to by the receipt of our gift.

The Christmas pattern is really an exception in our society: it is perhaps significant that children enjoy it most. Whereas in Trobriand life, it is the rule. Trobriand behaviour is not motivated by a sequence of events, or by any line of activities leading up to something. On the contrary, they do their best to ignore, to refuse such a sequence or line.

But is this line really present? Perhaps it is; maybe it isn't. But we feel happier when we think it is there. Then the situation has meaning and we can respond to it. If I tell you that Sally married a millionaire, that she's selling notions in Woolworth's, that she once worked for Vogue, went to Vassar and was poor—it's a mere jumble. But if I say Sally was poor, worked at Woolworth's, saved her money, went to Vassar, worked for Vogue, and then married a millionaire—now it all falls in line and makes sense. Our idea of happiness is bound with this motion along an established line leading to a desired end. Our conception of freedom rests on the principle of non-interference with this moving line which leads to a desired climax. As we see our history climactically, so we plan future experiences climactically, leading up to future satisfaction or meaning. Who but a very young child would think of starting a meal with strawberry shortcake, and ending up with spinach? The Trobriander meal has no dessert, no line, no climax. The special bit, the relish, is eaten with the staple food; it is not something to look forward to while disposing of a meaningless staple.

Now for members of our culture, value lies ideally in change, in moving away from the established pattern. We hopefully expect next year to be better, brighter, different; we hope it brings change. Our advertisers thrive on this value of the different. It's new, it's brighter! Our industries have long depended on our love for new models: 1956, just out! New! Our writers cannot plagiarize; our inventors must invent.

The Trobriander on the other hand expects and wants next year to be the same as this year. The new is not good; the old is known and valued. In repetition of experience he finds, not boredom, but satisfaction and safety. Members of our culture go into uncharted seas fearlessly. We explore new lands eagerly—mountain peaks, sea floors, inaccessible jungles and polar wastes. The Trobriander goes into known seas. He explores nothing. New lands, new thoughts, new ways, hold no interest for him. He was born into a culture that was operating long before he was born and will continue to operate long after he is dead.

NAME:
ADDRESS:
PHONE:

CIRCLE THE LETTER BEFORE THE BEST ANSWER. DO ALL OF THEM IF YOU CAN BUT DO NOT GUESS.

1. The Trobriand Islands are in:
   a the Pacific
   b the Caribbean
   c near New Guinea
   d Polynesia

2. The Trobriander values:
   a creativeness
   b the old and traditional
   c the new and the different
   d that which is useful

3. An art form in our society is valued for:
   a its position within a patterned activity
   b itself alone
   c its financial value
   d for many attributes, not all of which concern art

4. When we say, "The lightening flashed" we:
   a read action into the event
   b use an intransitive verb
   c describe the event as being without action
   d describe the event in the only possible way

5. The stone blades were:
   a used as inducement
   b equivalent to money
   c part of a patterned activity
   d gifts in payment for other gifts

6. English does not:
   a stress causality
   b differentiate between psychological and external experiences
   c emphasize time
   d employ a variety of adjectives

7. By lineality we mean:
   a patterned activities
   b emphasis upon being
   c connections, usually sequential, between things
   d the use of gestures

8. Our language and our culture structures experience so that it:
   a leads or should lead to a desired climax
   b emphasizes repetition and sameness
   c can be responded to
   d stands by itself, without reference to other experiences

9. In our language much value is attached to:
   a changes in temporal sequences
   b essence of being
   c ability of emotional expression
   d change and becoming

10. We stress causality and lineality because:
   a we are interested in relationships
   b we are interested in being
   c our language and culture teaches us to value them
   d this is the most accurate way to describe reality

11. The Eskimo language is characterized by:
   a lack of nouns
   b lack of tenses
   c lack of transitive or action verbs
   d lack of categories differentiating living from non-living

12. The English language makes continual use of:
   a several tenses (simultaneously)
   b spatial metaphors
   c words describing subjective, psychological experiences
   d categories differentiating internal and external experiences

13. The Trobriand language emphasizes:
   a change and becoming
   b varied use of adjectives
   c temporal aspects of objects
   d being and existence

14. A noun in the Trobriand language refers to:
   a a highly unique object
   b being as a whole
   c an object at a particular stage of growth
   d useful objects only

15. Native languages differ from English because:
   a they cannot express causality
   b they are not fully evolved
   c they do not deal with temporality
   d they contain other metaphysical systems

16. In our culture we tend to judge things in terms of:
   a intrinsic value
   b qualities and attributes
   c aesthetic satisfaction
   d relation to other beings

17. Disregard of chronological sequence is characteristic of:
   a all primitive languages
   b English language
   c the thinking of small children
   d Trobriand language

18. The implicit philosophy of English grammar makes us:
   a seek essence
   b ask "why"
   c value money
   d see lineality and being

19. In the lecture an analogy was drawn between:
   a money and a Valentine
   b foreign trinkets and necklaces
   c stone blades and Valentines
   d armbands and Valentines

20. Gift exchange among the Trobrianders is significant because it:
   a stimulates barter
   b symbolizes kinship and friendship
   c involves gifts which influence behaviour
   d is similar to Christmas-giving

The lecturer described two native philosophies, but at the same time said that the Eskimo, for example, had no philosophers. How would you interpret these two statements in terms of the lecture? Write 200-300 words. Use back of paper if necessary.

On the scale below indicaet with a check mark how you feel about the lecture

+5	+4	+3	+2	+1	0	-1	-2	-3	-4	-5
Liked very much					Indifferent					Disliked very much

WHAT I LEARNED IN THE PROJECT

Correction for Lasswell formula--not who is speaking to whom, but what is speaking to whom. Lasswell ignores the media; but obviously if a person is speaking into a P.A. system or into a radio microphone, etc., the who and the what are profoundly transformed.

That staples are media and media are staples. When iron ore and oil and lumber and fish are available to the population of a particular area, their patterns of association are much modified by this fact. Dorson in his recent volume <u>American Folklore</u> draws attention to the power of cotton in the United States in creating homogeneous culture capable of creating a spontaneous folklore. The same homogenizing power over human institutions is exercised by any economic staple like wheat, or lumber in Canada, but this serves to draw attention to the same power which resides in the media of communication. The mediaare, in fact, themselves staples or new natural resources. Media are extensions of the human senses. They modify the patterns of human association while remaining rooted in this or that sense, and these staples are not limited to any geographical area, but are co-extensive with the human family itself.

Another peculiarity of media as staples or natural resources is this: as they step up the speed of human transactions the information levels of the community rise. As information levels rise, one commodity becomes substitutable for another. No staple becomes indispensable as information levels rise. The tendency is for information to move, rather than commodities. The stress shifts

in human study and attention from subject matters to the learning process itself. The Universities which have long tended to be processing plants become studios of the learning process in action instead. Let us illustrate the implications of this change from that most popular of all subject matters--the ever-present threat of war.

To-day, civil defence would seem to consist in protection against media fallout. In the past, war has consisted in the movement of commodities back and forth across frontiers. To-day, when the largest commodity of all is information itself, war means no longer the movement of hardware, but of information. What had previously been "a peace time" activity within our own boundaries now becomes the major "cold-war" activity across frontiers. Instead of competing for the franchise and dollars of our own citizens, we are now engaged in trying to win the favourable attention of Asian and African millions for the star turn or top show. Our own conceptions of education and of warfare are so completely tied to 3,500 years of literacy that the meaning of the electronic revolution is much less obvious to us in the West than to a Japanese or a Chinese or to an African.

Another basic aspect of the electronic is that it telescopes centuries of development and evolution into weeks or months. In speeding up actual change, it makes the understanding of change much more feasible just as a movie of an organic process may reveal years of growth in seconds. But such acceleration of growth in no

way prepares the human community to adapt to it. Suddenly there is a nine foot redwood where in the morning you had experienced a bedroom.

Our educational, political and legal establishments are scarcely contrived to cope with such change. There is no mercy for culture-lag in our new technology. There is no possibility of human adaptation. Yet in all these situations we confront only ourselves and extensions of our own senses. There is always the possibility of escape into understanding. We can live around these new situations, even if we cannot live with them.

THE NEW CRITICISM AND THE NEW MEDIA

The so-called new criticism which followed after the new poetry which followed after the new developments in our Western world has most typically been engaged in explaining why works of art have no content and no subject matter. It was the new media themselves, from the telegraph (1830) onward which created the situation which the poets and painters tried to explain to us by "prophetic" new art forms. Is it not ludicrous that the very scientists who expected the radical changes should stand around with yammering and incoherent gesture while complaining of their inability to understand modern art?

For the past century, the artist has been our only navigator in social and political terms. The models which he makes are not wishful dreams that money can buy, but urgent factual instructions of the means of avoiding disaster. Big industry understands this, a little bit to-day. Artists move onward and upward in the commercial field through the departments of industrial and package design. In the field of operations research, the artist accepts the priority which is not his reward, but his responsibility.

To suppose that the teaching of media in our schools should be a peripheral feature of an august and a well-tested curriculum could be a disastrous supposition indeed.

In purely realistic terms, I feel that the associated power of specialist and vested interest of many kinds definitely insures that we shall fail to meet any and every challenge that is offered to us in the electronic age. Why should we understand new media

The New Criticism and the New Media - 2

when no generation of the Western poet has understood all media? However, now that we have begun to understand all media for the first time (see H. A. Innis, Empire and Communications) there is the outside possibility that we might decide to consider them as fit objects of study and control.

- END -

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Toronto, Canada,
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[illegible]

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